

VA MEDICAL CENTER WEST HAVEN, CT**SOW****Condensate Pit in Bldg. 1 and Bldg. 2****Proj. No. 689-12-037****PM Edward Jagielski**
203-932-5711 Ext. 2049

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CONTRACTOR SCOPE OF WORK

Condensate Pit in Bldg. 1 and Bldg. 2
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Project Manager: Edward Jagielski
203-932-5711 Ext. 2049

1. GENERAL:

Provide professional services to include all labor, transportation, materials, apparatus, tools, equipment and permits necessary to construct a condensate pit with all required equipment and gear as shown on the attached SK drawings.

VA Project Manager: Edward Jagielski Telephone #: 203-932-5711 Ext. 2049

2. PROJECT SCOPE OF WORK:

After award, but prior to the start of any field work, the contractor shall contact the Project Manager to review proposed methods and plans for completion of work and to review infection control procedures, interim life safety procedures, confined space plan, smoke/fire penetration permits and hot work permits. Field work may not commence until these plans have been approved.

2.1 PROJECT DESCRIPTION:

- Construct pit and sump, dimensions per plans and field conditions
- Relocate pipe to install structural steel
- Install structural steel per SK-1- shop drawings included
- Cut 1' thick concrete floor 4' x 4' in Building 1
- Install temp removable railing for safety
- Remove 4' x 4' old cast iron receiver from Building 1 crawl space, cut receiver up to remove from building & dispose of properly
- Install 3' x 3' SS sump, pipe footing drainage piping and FD for pit
- Install 5/8 rebar mat for slab & every 32" vertical for new block wall
- Pour concrete slab 3,500 PSI
- Charge for concrete pump truck
- Install CMU wall 5' high pour solid every 32". Bond beam on last course
- Back fill retaining walls up to 6" below top of block wall
- Install sump pumps, floats, top cover, core holes , extend wires up to new control panel. Install discharge & vent line, core holes in floor & connect to piping in Mechanical Room

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- Install 2 flash tanks and condensate pump into pit, core holes, extend wired from condensate pump up to new control panel
- Install piping from flash tanks to condensate pump per SK-6. Twin pumped discharge together, core hole, install pumped discharge to mechanical room pipe approx 60-80 ft away connected to pump condensate main that goes back to Boiler Plant
- Core holes, install 6" vents from both flash tanks and a 2 1/2 vent from the condensate pump up to mechanical floor, tie into 12" common relief valve vent.
- Replace deteriorated exhaust hood over the roof that is the discharge of the 12" relief vent.
- Electrical tie into main install new panel in old switch gear room, run conduit down into crawl space and up to connect to sump pump and condensate panel. Install conduits from panels and connect to motors in pit, install a light with switch and convenience outlet.
- Commission system before making tie ins from condensate mains. Use domestic water into flash tanks, set system up to pump condensate back.
- Replace and reroute the remaining condensate lines from where previously replaced to new condensate flash tanks. As we connect new system will discharge back to Boiler Plant by new system.
- Install new 2 1/2" condensate main to remove 3 HP traps that serve HPS that goes to the 10th floor. Remove the trap discharge that is tied into LP condensate and connect to new HP main that runs approx 300' to new flash tanks per SK 10 & 11. Includes 3 new trap stations.
- Insulate flash tanks, valves, piping apparatus that have been installed under this proposal.
- Remove & dispose of all piping and insulation that was replaced, remove existing condensate pump, steam piping & vent piping and electrical that is connected to it, cap off and make safe and properly dispose of material.
- Install fire rated Bilco door, safety railing with toe kick and ladder

Please note all valves and strainers are included per the SK drawing.

3. SUBMITTALS:

3.1.1 Certification from the Contractor/Installer that the system specified meets all identified code and insurance requirements as required by the Government.

3.1.2 Operation and Maintenance Manuals for new equipment

3.1.3 As-built drawings

3.1.4 Installation and Certification:

Certification from the Contractor/Installer that the system specified meets all identified code and insurance requirements as required by the Government.

Material Safety Data Sheets (MSDS) shall be available on-site.

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3.1.5 All contractor employees shall be certified at least to OSHA 10 and a superintendent at OSHA 30

4. CODE REQUIREMENTS

Project design shall be in compliance with all applicable standards and codes described in with VA "Design Guides and Manuals". All VA Master Specifications also apply to this contract. The VA documents may be found on the internet <Design Guides: <http://www.cfm.va.gov/til/dGuide.asp> >

4.1 Design Manuals: <http://downloads.va.gov/files/CFM-TIL/dManual/dmMEhosp.pdf>

4.2 Master Specifications: <http://www.cfm.va.gov/til/ncaSpec.asp>

5. BIDDING REQUIREMENTS

5.1 Lump Sum Bid

6. WARRANTIES

Provide warranties as per the Master Specification.

7. PROPOSED SCHEDULE:

Work hours for this project are:

- 7:00 AM to 4:30 PM Monday through Friday.

Work shall commence upon receipt of a Notice to proceed from the government and shall be completed within 90 days after receipt of Notice to Proceed.

8. Work Location and Restrictions:

The work site location is at the West Haven VA Medical Center in West Haven Medical Center in West Haven . The contract work is intended to be done at Building 1 and Building 2.

All work shall be done between the hours of 7:00am until 4:30pm Monday through Friday, holidays excepted, unless other times are arranged in advance and approved in writing by the Project Manager. All steam shutdowns shall be done off hours and/or weekends. When the contractor's work interferes with hospital functions, such as when work produces excessive noise, odors, dust, utility service interruptions, or other interferences with normal hospital operations that cannot be contained within the area of work, the contractor shall schedule said work at other than normal hours and as directed by the Project Manager.

9. Parking:

Parking is rigidly controlled throughout the Medical Center. Only one (1) Contracting Vehicle will be allowed in the staging area, all others will park in the outer section of lot #10 and will have visible

placards in their vehicles with a name of the vehicle operator, cell phone number and the name of the General Contractor they are working for. Consideration for more than one vehicle in the staging area will be reviewed by the VA Police and Contracting Officer before the approval is given. Failure to conform to this request may result in the vehicle being towed by VA Police at the General Contractors expense.

10. Storage of Equipment & Materials:

The contractor shall arrange with the Project Manager for allocation of required workspace and for the storage of equipment and material to be used for this project. Storage space is very limited. There are no exclusive areas within the campus that can be given to the contractor for their storage needs. Additionally, no space will be made available for the placement of a contractor trailer for this project. The Contractor should schedule delivery of materials to limit the amount of storage space and time.

11. Debris Removal

The Contractor/Installer shall be required to remove waste materials and debris daily from the campus. All waste material and debris shall be removed off the site by the contractor and shall be disposed of in accordance with applicable State and Federal regulations.

12. Site Utilities:

The Contractor/Installer should note this scope of work does not detail all existing structures, utilities, or components that may potentially interfere with the contract work required. The contractor shall note any obstruction, utility, or condition that may hinder or interfere with the execution of this contract and the contractor shall make provisions in their contract price to resolve such interferences and other conditions that may hinder the proper completion of the work. All proposed utility relocations, reallocations, and shutdowns shall be approved by the Project Manager prior to commencing such work. The contractor shall verify all existing utility installations and take appropriate action prior to working around any potential utility installation.

In the event a shutdown, restriction, or interruption of any utility services is required, a written request must be submitted (at least 2 weeks in advance) and approved by the VA Project Manager. All utility shutdowns must be reviewed and approved by the VA.

13. Infection Control:

All work shall be performed in accordance with the Construction Specifications for Infection Control of the West Haven VA Medical Center, which is attached (Attachment B). For purposes of this project, the work shall be considered Class and shall be accomplished using the controls indicated in the specifications and on the Infection Control Construction Permit attached. No work will be allowed

to proceed until an Infection Control Construction Permit has been completed and signed and all protective measures required by the permit are in place.

14. Project Safety:

Contractor shall comply with the Contractor Safety Manual of the West Haven VACHS. (Attachment A).

15. Penetrations of Fire and Smoke Barriers:

Prior to any installation of equipment, cables, power connections, conduit, piping or other work that penetrates a smoke or fire barrier, all such work must be approved by Facilities Management Service (FMS) of the VACHS West Haven. A penetration permit must be secured from FMS prior to disturbing the integrity of the barrier. The permit must be available for inspection at the project location (Attachment D). After the work is completed, the penetration must be repaired (sealed) according to accepted practice and utilizing materials (including UL/FM-listed through penetration fire stopping materials) that meet the original barrier construction requirements in order to restore the designed specifications for smoke and fire compartmentalization. All penetrations and miscellaneous openings must be protected according to NFPA 101, Chapter 8. Upon completion of any penetration repair, a visual inspection for approval must be requested from, and completed by FMS.

16. Interim Life Safety Protection Measures:

Contractor shall participate with the VA in the preparation of an interim life safety measures and fire protection Plan (Attachment C) that will be implemented during construction of this project. At a minimum, contractor shall comply with the following requirements of an interim life safety measures and fire protection plan (Attachment G) that will be implemented during construction of this project. At a minimum, contractor shall comply with the following requirements of an interim life safety measures and fire protection plan:

- Contractor shall be familiar with the safety plan outlined in the “Contractor Safety Pamphlet.” (Attachment E)
- Ensure exits provide free and unobstructed egress for all building occupants. If required by contractor’s operations, establish and mark alternate means of egress for all building occupants.
- Contractor shall maintain escape facilities from the work area for construction workers at all times. Means of egress in construction areas will be inspected daily.
- Ensure free and unobstructed access to all areas of the project site for emergency services and for emergency forces.
- Ensure that means of egress and existing fire alarm, detection, and suppression systems are not impaired by contractor’s operations.

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- Do not impair means of egress, automatic sprinklers, smoke and heat detection, and fire alarm systems, except for portions immediately under construction, and temporarily for connections. Provide fire watch in accordance with NFPA standards for impairments more than 4 hours in a 24-hour period. Any request approval of impairments from the Project Manager shall be in writing a minimum of 72 hours in advance.
- When required, a fire watch shall be by a qualified person provided by the contractor who shall maintain constant observation of the affected area and have no other duties. The person providing the fire watch shall be trained in fire prevention and in the use of fire extinguishers, occupant hose lines, occupant fire protection system, in sounding the building fire alarm and in notifying the local fire department, and in understanding the particular fire safety situation for the project. Fire extinguishers maintenance and monthly inspection must conform to the NFPA code.
- Provide written procedures and guidelines for construction personnel and post in the immediate areas of construction detailing what to do and who to call in the event of fire or emergency.
- Maintain the construction area to minimize the potential for fire or safety hazards resulting from storage of construction material, construction waste and debris during construction operations.
- All temporary construction shall be built of noncombustible/fire retardant materials and shall be smoke tight.

17. FIRE PREVENTION

Contractor shall comply with the requirements to prevent false fire alarms as provided in Attachment F. Contractor shall provide a fire watch when impairment of the fire alarm system exceeds 4 hours in a 24 hour period. All contractors shall know the hospital R.A.C.E. policy in case of a fire. (Attachment E)

18. Material & Workmanship Quality:

All materials and workmanship shall comply with all codes, standards, and recommendations of all Authorities Having Jurisdiction (AHJ). All work shall be done in a first class manner according to the best trade practices and to the satisfaction of the Project Manager.

19. SECURITY:

All contractor personnel shall obtain an identification badge issued by the VA. Such badge shall be worn by the individual and prominently displayed at all times while on VA property. No employee of the contractor shall enter the project site without a valid identification badge issued by the VA. In order to obtain an identification badge, contractor personnel shall present to the VA Sponsor, two valid (non-expired) photo identification issued by a US federal, state or local government agency.

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All contractor personnel are subject to inspection of personal effects when entering or leaving the project site.

ATTACHMENTS:

- A. VA Connecticut Healthcare System Contractor Safety manual
- B. Infection Control Risk Assessment
- C. Contractor Safety Pamphlet
- D. RACE Plan
- E. Fire Protection Plan
 - Permits
 - Hot Work: per FMS policy 30
 - Lock out tag out (LOTO) : per FMS policy 8

**VA Connecticut Healthcare System
West Haven Campus
Contractor Safety Manual**

Revision Date: 7-12-05

1.0 GENERAL INFORMATION

1.1 Standard Safety and Security Rules

The following are some reasons for which an employee of a contractor may be temporarily or permanently removed from Veterans Administration Medical Center (VAMC) premises:

- Possession or use of alcoholic beverages or regulated drugs not prescribed by a physician.
- Possession of explosives, firearms, ammunition, and other weapons.
- Deliberate violation of safety or security rules.
- Illegal dumping, handling, or disposal of hazardous materials.
- Destruction or removal, without written permission, of any property belonging to VAMC, the property owner, employee, or other contractors or employees.
- Intimidating, threatening, harassing, impeding or interfering with an inspector, security officer, or VAMC employee or designated representative.
- Using emergency exits other than for emergencies.
- Misuse of fire prevention and protection equipment.
- Unauthorized removal or destruction of a safety barricade, handrail, guardrail, warning sign, fall protection, or other warning devices intended to protect VAMC's patients, employees, neighbors or property.

1.2 Safety Permits and Procedures

The following operations may present a hazard to VAMC's patients, employees, neighbors or property. Therefore, you must obtain approval through the VAMC Contracting Officer Technical Representative (COTR) before:

- Working on fire protection/detection systems.
- Performing burning, welding, cutting, soldering, or other hot work.
- Working on electrical, steam, chilled water systems or other energized systems.
- Moving emergency equipment (fire extinguishers, first aid kits, etc.) provided by VAMC.
- Installing a temporary electrical service.
- Working with hazardous chemicals (including solvents and paints).
- Generating hazardous wastes (including waste oil).
- Using powder actuated tools.
- Using a gas, diesel, or LP (propane) powered engine indoors.
- Operating a power vehicle or self-propelled work platform.
- Excavation/trenching.
- Using radioactive sources or conducting field radiography (x-ray).
- Working with asbestos-containing materials.
- Working on security systems.
- Working with compressed air/gases.
- Using a laser.
- Working on a fume or biological hood.
- Working on a solvent storage cabinet.
- Working on heating, ventilation, or air conditioning equipment.
- Working on a roof.
- Lifting or hoisting with cranes, derricks, hoists or helicopter.
- Performing blasting operations.

Special Rules for Operations Involving Utilities:

- Only VAMC Facilities Operations may shut down or start up operating utilities.
- You must notify your COTR, who will coordinate with VAMC Facilities

Operations, *a minimum of one week in advance - in writing* of the need for such shutdowns or startups.

Special Rules for Lockout/Tagout of Machinery, Pipes, etc.:

- If you intend to service or maintain machinery that could hurt someone if it were to unexpectedly start up, you must inform the VAMC COTR of the lockout/tag-out procedures you intend to follow.
- See Section 3.3 on Lockout/Tagout generally.

1.3 Housekeeping

You must maintain good housekeeping. You must keep work areas neat, clean, orderly and free of excess trash and debris and never block walkways, stairs, exits, or create a tripping hazard. Cover and/or place guardrails around open holes, trenches, or excavations into which VA's patients or employees may fall. Poor housekeeping at a job site may lead to an increased potential for safety hazards and an increased incidence of accidents and chemical spills.

1.4 Accident, Incident, Injury, or Illness

After notifying the appropriate emergency agency (e.g., 9-1-1), work related accidents, incidents, injuries, and illnesses must be immediately reported to the VAMC COTR or representative. The Contractor is responsible for notifying OSHA for any incidents that are reportable to that agency.

2.0 ENVIRONMENTAL ISSUES**2.1 Hazardous Waste Management**

Hazardous waste generated by a Contractor as part of its work must be properly identified, stored and disposed of in accordance with all applicable local, state and federal laws. The Contractor must coordinate with its VAMC representative to provide a list of hazardous waste(s) to be generated during the project, and to determine the location(s) available for hazardous waste storage. The Contractor must also ensure, at a minimum, proper labeling, adequate secondary containment, segregation of incompatible materials and routine inspection of storage areas as required by law. In addition, all hazardous waste containers shall be constructed of a material that is compatible with the waste, shall be in sound condition, and shall be kept securely closed at all times in accordance with CTDEP regulations. Containers and/or tanks used to store hazardous wastes must be managed in accordance with CTDEP regulations and must be inspected daily.

The Contractor is responsible for completing all disposal documents, which may include, but are not limited to, waste profiles, waste analytical samples and hazardous waste manifests. VAMC Safety Office, shall be designated as the Generator on all documents and shall be provided with copies of all waste analyses, land disposal restriction forms and related documentation. Copies of all disposal documents shall be submitted to the COTR for review at least 5 days prior to shipment. The COTR or a Safety Office representative will sign the manifests as the Generator. At the time of shipment, the Contractor shall provide the bottom three copies of the manifest to the COTR or the Safety Office representative for distribution to the appropriate agencies.

The following table provides the specific generator status and EPA Identification Numbers that should be used on all hazardous waste manifests:

Generator Status

Site Address Hazardous

Waste

Waste Oil

EPA ID or DEP

Registration

Contractor employees must be appropriately trained in hazardous waste procedures. In the event a Contractor encounters previously unidentified material that is reasonably believed to be radioactive, volatile, corrosive, flammable, explosive, biomedical, infectious, toxic, hazardous, asbestos containing or oil-based, the Contractor shall immediately stop work in the affected area and report the condition to the COTR. At no time shall such material be disposed of in chutes, dumpsters, drains, pipes or any other waste container. The Contractor agrees to cooperate with the COTR and any consultants engaged by the COTR to perform services with respect to the analysis, detection, removal, containment, treatment and disposal of such regulated materials.

2.2 Transport of Hazardous Materials

All transportation of hazardous materials while on VAMC property shall be conducted in accordance with USDOT Hazardous Materials Regulations for proper packaging, marking/labeling, handling, documentation, etc. At no time should hazardous materials be transported via public or private roads at VAMC in a manner that could result in an unsafe condition for personnel or the environment.

2.3 Spill Prevention and Control

VAMC's Spill Prevention Control and Countermeasures (SPCC) Program establishes Medical Center-wide procedures for the prevention and detection of spills and/or releases of oil or hazardous materials, including the following:

- Based on the inventory of oil and hazardous chemicals that will be brought on-site, the Contractor shall have available equipment (e.g., secondary containment pallets, absorbent pads, absorbent booms, speedi-dry, etc.) that is suitable and sufficient to control a potential spill/release.
- The Contractor is responsible for identifying conveyances to the environment (e.g., sumps, storm/floor drains, etc.) and adequately minimizing spill potential to these areas.
- The Contractor is responsible for the proper storage of all flammable and combustible chemicals that are brought and/or stored on site to complete the work of this contract. Such storage may require the use of safety containers, safety cabinets, and/or secondary containment. The Contractor shall also ensure that any incompatible chemicals are safely segregated. The Contractor is responsible for maintaining and securing all chemical containers and all chemical storage areas. This requires selecting locations and methods to minimize exposure to rainfall, surface water, and the ground surface or subsurface. Enclosures, shelters, and secondary containment should be used where appropriate.
- The Contractor must use appropriate protective procedures such as double containment, employee training, overflow protection, and other measures as part of activities involving the use, storage, or handling of petroleum products or hazardous materials on VAMC property.
- The Contractor must ensure that his/her employees are adequately trained in spill procedures outlined below.

The Medical Center's SPCC Program also establishes reporting requirements in the event of a spill or release of oil or hazardous materials. In the event of a release or spill, the Contractor must follow all of the reporting requirements of the SPCC Program as specified below:

- (1) The Contractor shall extinguish all sources of ignition and isolate incompatibles or reactive chemical substances.
- (2) The Contractor shall determine if the spill/release is incidental or non-incidental.
- (3) For incidental spills/releases:
 - ◆ The Contractor shall attempt to stop or contain the spill/release at the source provided that doing so does not endanger anyone.
 - ◆ The Contractor shall prevent discharge of materials to environmental receptors including drains, sumps, soil, etc.
 - ◆ The Contractor shall immediately notify the COTR of all incidental spills/releases.
 - ◆ The Contractor is responsible for the proper collection, storage and disposal of waste materials in compliance with EPA and DEP regulations and in cooperation with the COTR.

(4) For non-incidentals spills/release:

- ◆ The Contractor shall immediately report the spill/release to the Medical Center Safety Office. The Medical Center's Safety Office will advise you on the need for initiating contact with spill response vendors.
- ◆ The Contractor shall follow the steps for incidental spill/releases identified in item (3) above, provided that it is safe to do so.
- ◆ VA's Safety Office will coordinate ALL reporting to outside agencies and will conduct follow-up written notifications if necessary.
- ◆ The Contractor will conduct an incident analysis and coordinate with the COTR and Medical Center Safety Office on any actions that are required to prevent recurrence.
- ◆ If it is deemed necessary to engage a professional spill cleanup company, Medical Center Safety Office will coordinate the cleanup through the COTR.

2.4 Pest Control

If a Contractor or his/her employees see evidence of cockroaches, mice, ants or other pests during the course of their work, they must notify the COTR immediately. The Contractor shall not use any insecticide products on Medical Center property unless such activities are part of your contracted work and you are specifically trained to do so.

2.5 Air Emissions

Combustion Units

[Combustion units include, but are not limited to, boilers, heaters, emergency generators.]

¹ **"Incidental"** spills meet **ALL** of the following criteria: 1) personnel are familiar with the hazards associated with the spilled material; 2) containment/response does not pose potential health and safety hazards (e.g. fire, explosion or chemical exposure); 3) a small quantity (less than 10 gallons) of material is spilled/release which **DOES NOT** reach the environment or pose potential health and hazardous; and 4) spilled/release material can be readily absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate area or by maintenance personnel.

² **"Non-incidentals"** spills include 1) major spills/release (e.g. greater than 10 gallons) that do not reach the environment

or 2) any amount of spilled material that escapes to the environment (including drains, sumps, soil, etc.).

All Contractors must immediately report the following to the COTR:

- Any maintenance or repairs to a combustion unit that could result in a change in maximum heat input value or overall emissions (e.g. burner replacement or fuel conversions).
- Any conditions discovered which could have resulted in an increase on air pollutant emissions.

CFC Containing Units

[CFC containing units include those containing any ozone depleting refrigerants including, but not limited to, Chlorofluorocarbons (CFC) and Hydrochlorofluorocarbons (HCFC).]

Contractors shall immediately notify the COTR whenever they become aware of any unintentional or intentional release of CFCs above de-minimis levels as established by EPA regulators. Contractors shall provide the following documentation to the COTR:

- EPA certifications for any reclaimers to which CFC products evacuated from VAMC systems are to be sent
- Certifications for any CFC recycle/recovery equipment to be used at VAMC.
- Technician Certifications.

- Service records for all units containing greater than 50 pounds of refrigerant. Records must include the date and type of service and the type and quantity of refrigerant added.

Contractors shall immediately notify and provide documentation to the COTR whenever:

- A leak rate equals or exceeds 35% per year for commercial/industrial processes
- A leak rate equals or exceeds 15% per year for comfort cooling processes
- A release occurs of >100 pounds in a 24 hour period for CFC-12, CFC-113 and R-500.

Halon

Service providers shall immediately notify the COTR whenever it becomes aware of any unintentional or intentional release of halon.

2.6 Stormwater and Wastewater

Stormwater

Projects that disrupt over one (1) acre of land must adhere to the EPA's Phase II stormwater requirements. These projects are required to obtain a NPDES permit and implement best management practices. The Contractor is responsible for obtaining such permits before the start of work.

Wastewater

VAMC's wastewater discharge is regulated by the state and local governing agencies (typically MDC or the City of West Haven). The discharge of any wastewater must adhere to applicable Specific Prohibitions. These include but are not limited to:

- No discharge of mercury, silver or other metal-bearing wastewater.
- No discharge of highly corrosive substances ($5 < \text{pH} < 10.5$).
- No discharge of flammable materials that could create a hazard for VAMC personnel or treatment works personnel.

The Contractor must identify all wastewater streams for the COTR and obtain approval for drain discharge. In addition, for excavation projects, the Contractor is responsible for obtaining and adhering to the Dewatering permit.

2.7 Biological/Chemical/Radioactivity Hazards

Some VAMC operations involve the use of biological, chemical, or radioactive material that can be hazardous to VAMC patients or employees if not handled safely. Areas where work with biological, chemical, or radioactive materials is being performed will be marked with appropriate signs. Do not enter these areas and do not handle hazardous biological, chemical, or radioactive material unless it is part of your contracted work and you are specifically trained to do so.

2.8 Asbestos Containing Materials

VAMC will have determined, before work is begun, the presence, location, and quantity of asbestos-containing or potentially asbestos-containing materials that would be specifically impacted by the work of your contract. The VAMC COTR will provide a specific asbestos audit report for those work areas in question. The Contractor shall not disturb asbestos-containing materials unless such activities are part of your contracted work and you are specifically trained to do so. Asbestos abatement contractors should coordinate with the COTR and the Medical Center's Safety Office for specific requirements for asbestos abatement work.

The Contractor shall not disturb, damage or otherwise handle any *suspect* asbestos containing material. It is recommended that the following suspect materials be assumed to contain asbestos:

Cement Pipes/High Temperature Gaskets/Electrical Wiring Insulation
Cement Wallboard/Lab Hoods/Benches/Gloves/Chalkboards
Cement Wallboard/Fire Blankets/Curtains/Doors/Roofing Shingles and Felt
Flooring Backing/Elevator Equipment Panels/Base Flashing
Construction Mastics/Elevator Brake Shoes/Thermal Paper Products
Acoustical Plaster/HVAC Duct Insulation/Caulking/Putties
Decorative Plaster/Boiler Insulation/Adhesives
Textured Paints/Coatings/Breeching Insulation/Wallboard
Ceiling Tiles and Lay-in Panels/Pipe Insulation/Joint Compound
Spray-applied Insulation/Cooling Towers/Vinyl Wall Coverings
Blown-in Insulation/Electrical Cloth/Asphalt Floor Tile
Fireproofing Materials/Heating and Electrical Ducts/Vinyl Sheet Flooring
Taping Compounds/Electrical Panel Partitions/Vinyl Floor Tile
Packing Materials (wall/floor penetrations)
Ductwork Flexible Fabric/Connectors/Spackling Compounds

The Contractor shall not sweep, dust, vacuum or mop dust or debris that is the product of a suspect asbestos containing material. The Contractor shall also not pick up or throw away any suspect asbestos-containing waste or trash. If it material that is suspected to be asbestos-containing is disturbed and becomes airborne,

the Contractor shall immediately notify the COTR and the Safety Office. If it is part of the Contractor's work, stripping of floor finishes shall be done using low abrasion pads at speeds lower than 300 rpm and wet methods shall be used. The Contractor shall take care not to over-strip floors and shall stop stripping immediately upon removal of the old surface coat. Sanding of flooring material is strictly prohibited unless it is part of your contracted work and you are specifically trained to do so.

Any suspect asbestos containing material that is observed by the Contractor to be crushed, ripped, broken or in any way damaged should be reported to the COTR immediately. Contractors must, within 24 hours, convey to the VAMC COTR any information they newly discover concerning the presence, location and quantity of asbestos-containing or potentially asbestos-containing materials.

2.9 Lead Paint

Contractor's should assume that any painted surface they come in contact with is coated with lead-based paint.

Therefore, Contractor's should not perform any intrusive, dust-generating work on painted surfaces (e.g., drilling, cutting, brazing, scraping, demolition), unless the surface has confirmed to be non-lead or unless such work is part of your contracted work and you are specifically trained to do so.

Any painted surfaces that have loose, flaking, chipping or otherwise non-intact paint should not be impacted by the Contractor and should be reported to the COTR immediately. Lead paint abatement contractors should coordinate with the COTR and the Medical Center's Safety Office for specific requirements for lead abatement work. Refer to the section of this manual on Hazardous Waste for guidelines on the proper disposal of lead containing paint.

3.0 OSHA SAFETY ISSUES

3.1 Hazardous Materials and Hazard Communication

Hazardous Materials

- Do not handle or use hazardous materials without training by your company's representative.
- No solvents, paints, or similar flammable, toxic, or irritating materials may be used in areas occupied by VAMC patients or employees, unless specifically approved in writing by the VAMC COTR.
- Maintain adequate ventilation when paints or solvents are used.
- Use flammable solvents and materials with extreme caution.
- Store flammable paints and solvents in approved flammable liquid storage cabinets if inside buildings.

Hazard Communication

The Contractor shall submit an inventory of all hazardous chemicals that are brought on-site with accompanying Material Safety Data Sheets to the COTR. The Contractor shall also ensure that all containers that are brought on site for the storage of hazardous chemicals (e.g., gas, paint, etc.) are labeled and inspected in accordance with all applicable regulations. The Contractor shall remove all hazardous chemicals that it brings on-site when work involving a specific hazardous chemical is complete. The Contractor may request and review Material Safety Data Sheets for any chemicals that are encountered on Medical Center property during the performance of its work.

3.2 Confined Space Entry

Background

VAMC has developed and implemented a Confined Space Entry Program to protect all Medical Center employees who are required to enter confined spaces. The VAMC's complete written program is available for review upon request to the Safety Officer.

This Medical Center-wide program defines a "Confined Space" and an "Enclosed Space" in accordance with 29 CFR §§ 1910.146 and 1910.269, respectively. Entrance into any of these spaces by a Contractor requires adherence with all applicable regulations as well as with certain Medical Center protocols as defined further below.

As part of the Confined Space Entry Program, the Medical Center performed hazard assessments, developed inventories and posted all confined and enclosed spaces at the point of entry. These postings

include information on the classification of the space (e.g., "Permit Required", "Non-permit Required"), the confined space ID number, the location, the known hazards, and the minimum personal protective equipment needed for entry. Where available the Medical Center's experience with the confined space is also included on the signage. The Medical Center Confined Space Inventory and hazard assessment forms are available at the Safety Office.

Requirements

- The Contractor is responsible for developing, implementing and maintaining his/her own Confined Space Entry Program, including provisions for emergency rescue in accordance with OSHA regulations as it applies to the work of this contract.
 - If during the course of its work, the Contractor encounters a confined space that has not been previously identified by the Medical Center, it must immediately bring the space to the attention of the COTR and delay entry until VAMC Safety Office has examined the space.
 - When both Medical Center personnel and Contractor personnel are working in or near confined spaces, the Contractor shall coordinate all operation with the affected Medical Center personnel before entry.
 - Advance notification is always required. Whether you enter a confined space with a VAMC employee or not, the Contractor's entry attendant must always first *inform* the VAMC Safety Office and COTR *before* you enter a confined space.
- The Contractor shall provide the Safety Office with:
- The exact location of the confined space and confined space ID number;
 - The time of entry and approximate entry duration; and
 - The names of authorized attendants and entrants.
- *After the entry:* If you have entered a "permit-required" confined space, you must, after the entry is concluded, notify VAMC of (1) the permit space program you followed and (2) any hazards you confronted or created in the space.

3.3 Lockout / Tagout

VAMC protects its patients, employees, neighbors and property in part by complying with 29 CFR 1910.147 – Control of Hazardous Energy Sources (Lockout/Tagout). As part of the VAMC's Lockout/Tagout Program standard locks and tags are used to control the start-up of equipment that is being serviced or maintained by its employees. At no time shall the Contractor or its employees override any locks or tags that they encounter during the performance of its work.

The Contractor is responsible for developing, implementing and maintaining his/her own Lockout/Tagout Program in accordance with OSHA regulations as it applies to the work of this contract. The Contractor shall submit a copy of its Lockout/Tagout Program to the Safety Officer before the start of any work where 29 CFR 1910.147 is applicable. The only purpose of this submission is to ensure that, for the safety of VAMC's, patients, employees, neighbors or property, the Contractor's lockout/tagout procedures are consistent with restrictions and prohibitions of VAMC's lockout/tagout program.

- VAMC Engineering and Utilities will shut down and start up utility systems.
- The Contractor will maintain a log of all machines and equipment that are locked out and/or tagged out during the performance of the work of this contract. This log shall identify the equipment that was worked on, the date that work was performed, and the name of the individual performing the work. The Contractor will submit this log to the COTR on a daily basis when lockout/tagout work is being performed.

3.4 General Electrical Safety

- Only qualified electricians are permitted to work on electrical systems and equipment that uses or controls electrical power.
- Do not operate electrical tools or equipment in wet areas or areas where potentially flammable dusts, vapors, or liquids are present, unless specifically approved for the location.
- Should a circuit breaker or other protective device "trip," ensure that a qualified electrician checks the circuit and equipment and corrects problems before resetting the breaker.
- Erect barriers and post warning signs to ensure non-authorized personnel stay clear of the work area.
- Report hazards (lack of protective guards or covers, damaged equipment, etc.) to the VAMC

COTR immediately.

- Do not leave electrical boxes, switchgear, cabinets, or electrical rooms open when not directly attended. Insulate energized parts when covers have been removed or doors are ajar. Use of cardboard, plywood, or other flammable materials to cover energized circuits is prohibited.

3.5 Compressed Gas Cylinders

Compressed gases can pose a severe hazard to VAMC's, patients, employees, neighbors and property. Therefore, the following measures must be taken for their protection:

- Valve protection caps must be in place when compressed gas cylinders are transported, moved, or stored.
- Close cylinder valves and replace valve covers when work is complete and when cylinders are empty or moved.
- Secure compressed gas cylinders in an upright position in a welding cart or to a solid object (using chains, straps, or a rigid retaining bar). Secure compressed gas cylinders on an approved carrier while being transported.
- Keep cylinders at a safe distance or shielded from welding or cutting operations. Do not place cylinders where they can contact an electrical circuit.
- Keep oxygen and flammable gas regulators in proper working order and a wrench in position on the acetylene valve when in use. If not manifolded together, separate oxygen and flammable gas cylinders by 20 feet or a 5 foot high fireproof barrier.
- If a leak develops in a cylinder and it cannot be immediately corrected, move the cylinder to a safe location outside the building.
- Use only approved spark igniters to light torches.
- Cylinders must not be taken into or stored in confined spaces, including gang boxes and office/storage trailers.
- Do not store hoses and regulators in unventilated or closed containers or areas.
- Do not leave behind partially filled or empty cylinders. Always remove them from the site.

3.6 Powder-Actuated Tools

Powder-actuated tools can pose hazards to VAMC's patients, employees, neighbors and property. Such tools are, therefore, not permitted in occupied VAMC buildings without the approval of the Medical Center COTR. In addition:

- Contractor's who operate powder-actuated tools must be properly trained in their use and carry a valid operator's card provided by the equipment manufacturer.
- Each powder-actuated tool must be stored in its own locked container when not being used.
- A sign at least 7 inches by 10 inches with bold face type reading "POWDER-ACTUATED TOOL IN USE" must be conspicuously posted when the tool is being used.
- Powder-actuated tools must be left unloaded until they are actually ready to be used.
- Powder-actuated tools must be inspected for obstructions or defects each day before use.
- All Powder-actuated tool operators must have and use appropriate personal protective equipment such as hard hats, safety goggles, safety shoes and ear protectors.

3.7 Welding, Cutting, and Brazing

- Obtain a permit from the project engineer for each separate work activity and ensure that all conditions of the permit are met at all times. The permit must be submitted to the COTR and Safety Officer prior to the start of any welding/cutting/brazing work. In addition, the Contractor must also maintain its own hot work permit system in accordance with OSHA regulations.
- Remove combustible materials from the area before beginning work.
- Elevate oxygen/acetylene hoses seven feet above the work area or otherwise protect them from damage.
- Install anti-flash back (safety/check) valves in both the oxygen/acetylene hoses at the regulator.
- Shield adjacent areas with welding partitions.
- Have a second person stand by with an approved fire extinguisher for welding and burning operations in accordance with OSHA regulations and permit requirements. This person should remain in the area

for a minimum of 30 minutes after the hot work is completed to ensure the site is cold.

3.8 Cranes and Rigging

Each crane, rigging, or hoist brought onto VAMC property must have an annual inspection performed by a certified testing agency. Additional inspections will be done every day that equipment is on site. Before operations begin on site, documentation, including a log book, must be provided to VAMC COTR or its designee.

The operator is responsible for the proper placement of the crane in relationship to the load to be handled and the landing area so as to obtain the best rated lift capacity, and the installation and maintenance of crane swing radius protection.

All operators must possess a valid Massachusetts hoisting license. Documentation of this license shall be provided to the VAMC COTR . At no time shall loads be hoisted by a non-licensed operator.

3.9 Miscellaneous Additional Safety Rules for the Protection of VA Medical Center Patients, Employees, Neighbors and Property.

- Do not perform work over the heads of people or leave tools or equipment overhead.
- Isolate your work area with safety markers, tape barriers, blinker lights, etc.
- Report unsafe acts or conditions to your supervisor.

Infection Control Risk Assessment

Matrix of Precautions for Construction & Renovation

PROJECT NAME: STEAM REDUCING STATIONS, CONDENSATE RETURN

Infection Control approval will be required when the Construction Activity and Risk Level indicate that **Class III** or **Class IV** control procedures are necessary.

SCOPE OF WORK:

STEP 1: Using the following table, identify the Type of Construction Activity

TYPE A	Inspection and Non-Invasive Activities. Includes, but is not limited to: <ul style="list-style-type: none"> Removal of ceiling tiles for visual inspection limited to 1 tile per 50 square feet. Painting (but not sanding). Wall covering, electrical trim work, minor plumbing and activities that do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.
TYPE B	Small scale, short duration activities that create minimal dust. Includes, but is not limited to: <ul style="list-style-type: none"> Installation of telephone and computer cabling. Access to chase spaces. Cutting of walls or ceiling where dust migration can be controlled.
TYPE C	Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies. Includes, but is not limited to: <ul style="list-style-type: none"> New wall construction. Sanding of walls for painting or wall covering. Removal of floor coverings, ceiling tiles and casework. Minor duct work or electrical work above ceilings. Major cabling activities. Any activity that cannot be completed within a single work shift.
TYPE D	Major demolition and construction projects. Includes, but is not limited to: <ul style="list-style-type: none"> Activities that require consecutive work shifts. Requires heavy demolition or removal of a complete cabling system. New construction.

Step 1 Determination: TYPE A

Step 2: Using the following table, identify the Patient Risk Groups that will be affected.

Low Risk	Medium Risk	High Risk	Highest Risk
Office areas <i>Mechanical Rooms</i>	Blind Rehabilitation Nuclear Medicine Physical Therapy Primary Care Clinics Radiology/MRI Respiratory Therapy CLC (T3W)	Cardiology Clinical Labs Echocardiography Endoscopy Emergency Room Distribution Pharmacy Med/Surg units	Bronchoscopy Cardiac Cath Lab Intensive care units, including Stepdowns Interventional Radiology Operating Rooms (OR) & One Day Surg (APU) and PACU Outpatient chemotherapy infusion units SPD (Sterile Processing & Decontamination)

Step 2 Determination: RISK Low - NO patients exposed

CONSTRUCTION PROJECT CLASS				
Patient Risk Group	TYPE A	TYPE B	TYPE C	TYPE D
LOW Risk Group	I	II	II	III/IV
MEDIUM Risk	I	II	III	IV
HIGH Risk Group	I	II	III/IV	IV
HIGHEST Risk	II	III/IV	III/IV	IV

Step 3 Project/ Construction Class: CLASS A-1

Step 4 Projected Utility Outages Impacting Infection Control (Mark all that apply)

Electrical	Potable Water	HVAC	Medical Vacuum	Sewer	Other:
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Step 5: Identify site(s) of activity (e.g., patient rooms, medication rooms, etc)**Step 6: Identify areas surrounding the project area, assessing potential impact (above, below, behind, front, lateral)**

	Above	Below	Lateral right	Lateral left
Area(s)				
Impact				

Additional Comments

1.

2.

3.

4.

INFECTION CONTROL APPROVAL	
Signature: <i>Sheela Smith RUCIC</i> <i>Bobbie Welch, IC Mgr</i>	Date: <i>1/5/12</i>
COTR	
Signature: <i>Edward Papilahi</i>	Date: <i>1/5/12</i>
Contractor (if applicable)	
Signature:	Date

Cranes and Lifting: The contractor will submit a lift plan prepared by a competent person to the VA contact person for approval prior to the arrival of the hoist on site. Certification of lifting equipment will be current and available for inspection.

Ladders and Scaffolding: Contractors will supply their own ladders. Scaffolding will not be erected without prior approval from the VA contact person. Scaffolding will be erected and dismantled under the supervision of, and inspected by a competent person. Initial and periodic inspections will be documented and available for review.

Worksite Safety Inspections: The contractors' employer is responsible to provide a worksite free of recognized hazards. To this end, the general contractor will perform safety inspections of their worksites with the COTR on a daily basis. The VA contact person should be invited to observe these inspections.

PPE: Contractor employers will have a written OSHA compliant PPE program where PPE requirements are based on a written hazard assessment. Contractor employees will have been trained on the PPE they are required. Where respirators are required, the employer will have a compliant written respirator program and employees will be trained and fit tested per OSHA requirements.

Asbestos: Prior to the commencement of work, the VA contact person will survey construction areas for asbestos containing materials, and notify the contractor of the presence of asbestos in their worksite. Contractors will not disturb any material designate as asbestos or containing asbestos (with the exception of asbestos abatement projects). Contractor will show proof of asbestos awareness training in accordance with OSHA.

Lead: Prior to the commencement of work, the VA contact person will survey construction areas for lead containing materials, and notify the contractor of the presence of lead in their worksite. Contractors will not disturb any material designate as lead or containing lead (with the exception of lead abatement projects).

Hazardous Material Spills: The Connecticut DEEP defines a spill as any quantity of hazardous material outside its container" Report ALL spills to the Safety Hotline at 7389 or VA Police at 4911 or 6911 at Newington.

Waste and Housekeeping: Construction areas will comply with OSHA housekeeping requirements and swept clean at the end of each work day. Waste and debris will be removed by the contractor and disposed of in accordance with environmental regulations. Contractors will not use VA dumpsters or other trash receptacles for their waste or construction debris.

Green Environmental Management System:

Contractors will evaluate environmental aspects and impacts from the project and comply with applicable EPA, CT-DEP and VACHS environmental programs:

- Clean Air Act (boilers, generators, ETO, HAP emission, and fuel burning equipment)
- Clean Water Act, Safe Drinking Water Act (waste water discharge, storm water protection, sediment & erosion control)
- Underground/ Aboveground Storage Tank
- National Environmental Policy Act (NEPA)
- Resource Conservation and Recovery Act (RCRA) (solid waste, hazardous waste, universal Waste, used oil recycling)
- Toxic Substances Control Act (TSCA, asbestos, lead, PCB, etc.)
- Energy Independence and Security Act (EISA)
- CT State and Local Requirements

Solid Waste Management: Contractors will evaluate the solid waste to be generated from the project. Reuse and/or recycle construction debris (e.g. wood, metal, plastic, masonry, used oil) as much as possible. Submit the recycling records to VA Safety Office.

Hazardous Waste Management: Contractor will evaluate any hazardous waste to be generated from the project. Comply with VACHS's hazardous waste management plan including universal waste. Recycle fluorescent lamps, bulbs, mercury-containing equipment, batteries, used computer and electronics. Submit the recycling records to VA Safety Office. All hazardous waste generated from your project shall be reviewed by VA Safety Office. Any hazardous waste shipment manifests must be approved and signed by a VA Safety Officer who has a current RCRA & DOT training.

VACHS's GEMS Program emphasizes on Pollution Prevention, Resource Conservation, Waste Minimization, and Continual Improvement

V. A. Connecticut Healthcare System



Contractors' Safety Information

Published by the VACHS
Facilities Management Services Dept.,
the VACHS Safety Office, and
Green Environmental Management
System (GEMS) Program

January 2012

950 Campbell Avenue
West Haven, CT. 06516

Safety Hotline 7389

Introduction: In this pamphlet, the term contractor refers to companies and their employees who perform work or provide services on the VA Connecticut Healthcare West Haven and Newington Campus, and the VACHS CBOCs. It provides only basic information. Contractors are expected to comply with all applicable local, state, and federal regulations and codes, as well as requirements in their contract with the VACHS. Contractors will have a written safety compliance program which addresses how they will comply with all applicable OSHA, EPA and CT-DEP requirements for the work they perform. Questions should be addressed to your

VA contact person listed here

NAME Edward Jagielski _____ EXT: 2049 ____

Contractor Signature _____

If you have urgent safety questions and your contact person is unavailable, call the safety office at ext. 7389.

Fire: (VA phones)

West Haven Campus — Dial 4911

Newington Campus — Dial 6911

In the event of an evacuation, contractors should have a pre-determined meeting spot away from buildings and out of the roadway. One person should be responsible to report if all are present.

Medical Emergencies: Contractors should have provisions to provide first aid or summons local medical emergency services (911) if needed. After 911 has been called, notify the VA police at ext. 4911 to inform them 911 has been called.

Working in a Healthcare Environment: Measures must be taken to isolate and secure the work zone from patients and visitors, limiting access to authorized personnel only. Tools and equipment must be under the direct control of the contractor.

SAFETY INFORMATION & GEMS AWARENESS

Campus Rules:

Identification: Contractors will report to Building 15 and sign in prior to reporting to their worksite daily, unless they have been issued an ID badge for extended projects. ID badges will be worn on the upper torso in plain sight at all times.

Driving and Parking: The speed limit on Campus is 15 mph and strictly enforced. Contractors will not park in lots reserved for staff, on the grass, or in any other no-parking area. Vehicles in fire lanes will be towed. Some long term projects may have special designated parking. All contractors will have a sign visible through the windshield indicating the Name of their employer and the specific location of their worksite. Note that **Citations issued on Federal Property are treated as a federal offense, and go before a federal judge.**

Smoking: There is no smoking within 50 feet of any building. Please use designated receptacles.

Using Facilities: Contractors assigned to worksites designated as construction zones will not travel through public and patient areas of the hospital, use hospital lavatories, passenger elevators, or canteen service.

Prohibited Items: Cameras, tape recorders, fire arms or other weapons, alcoholic beverages, non-regulated explosives or gasoline engines inside any building are prohibited.

No chemicals or hazardous materials will be brought on site without prior approval of the MSDS. Use environmental friendly or green products whenever you can. Submit all MSDS to your VA contact.

OSHA Programs and Special Conditions: OSHA requires employers to have compliant safety programs and trained employees. In addition, the VACHS requires that ALL contractors hold a U.S. DOL issued card certifying completion of the OSHA 10 or 30 hour outreach training for construction safety.

Compressed Gas Cylinders: When not in use, cylinders will be stored with the protective cap on, in an up-right position and physically secured. Valves and hoses will be leak checked before use.

Trenching and Excavation: All trenching and excavating will be done in compliance with OSHA requirements and under the supervision of a competent person. Barriers and silt dams will be in place before work begins.

Confined Spaces: All confined spaces on VACHS property are assumed to be permit required unless they become re-classified by written assessment. Contractors entering confined spaces shall have, and been trained in an OSHA compliant Permit Required Confined Space Entry Program. The VA contact person will provide a written hazard assessment of the space, but it is the obligation of the contractor to perform and document their own hazard assessment prior to entry. Contractors will provide their own entry and safety equipment, rescue, and notify their VA contact person whenever a confined space entry will be made.

Hot Work: Welding, cutting, brazing or work which produces heat or sparks or involves a flame requires a hot work permit for each shift the work is being performed. Notify your VA contact person if hot work is to be performed.

Elevated Work: Contractors performing work on elevated surfaces as defined by OSHA will have appropriate compliant fall protection, and will have proof of receiving fall protection training.

Electrical Work: Contractors will have and be trained in their own compliant Lockout Tagout program. Lockout tagout of equipment or electrical service by a contractor will be coordinated with the staff electricians and affected employees by the VA contact person who will facilitate a pre-planning meeting to ensure uniformity of process.

Containment (Smoke, dust, noise, odors, etc): Work zones will be so enclosed as to contain smoke, dust, noise, or odors, and preclude them from infiltrating other parts of the hospital. Methods to ensure compliance should include negative air pressure equipment where possible. Testing of the containment is required to demonstrate to the VA contact person that it is properly sealed prior to commencement of use. Poly used to seal off areas will be fire retardant.

The Fire Plan for VAConnecticut HCS

Procedures in case of a fire emergency

For Healthcare occupancy (West Haven) and Business occupancy (Newington) the protection of patients, visitors and staff shall require a prompt and effective response.

RACE = Remove / Relocate - Alarm activate - Confinement - Extinguish

Fire Emergency Response Procedures West Haven Campus - Building One & Two

Prior to Horizontal or Vertical relocation, it should be determined if evacuation is necessary. If the incident is contained within the area of origin, occupants may choose to assume the “stand & defend” posture. All elements of the RACE’ Fire Plan shall be complied with short of relocation. Once smoke or fire enters the general corridor area or it has been determined unsafe, all occupants on the floor in alarm must follow through with the prescribed evacuation plan for the area.

Note: Red Door Frames represent a smoke or fire barrier. Not all floors have horizontal smoke barriers. However each floor above ground level has minimum of two exit stairs serving as a means of egress to a safe area.

Outer Buildings - Fire Evacuation Plan

Everyone shall evacuate in the event of a fire. The fire alarm system shall be activated

Fire Emergency Response (Newington)

Horizontal / Vertical / Full evacuation

Emergency Assistance Information – (See RED badge with ID badge)

	<u>West Haven</u>	<u>Newington</u>
Code Red (Fire)	X 4444	X 6222
Code 2 (Disruption)	X 2222	X 6444
Code 5 (Medical Emergency)	X 5555	X 6333
Police Emergency	X4911	X 6911
Code Yellow (Missing Patient)	Contact Supervisor for instructions	
Off site: Emergencies	*911 Safety Hot line 7389	

Signals/ Announcements:

Disaster code (West Haven): “March Time Bells – continuous bells followed by an overhead announcement.

Disaster code (Newington): “March Time Chimes” – Audible announcement transmitted via the fire alarm system.

Fire alarm signals (West Haven) Building One and Two will be initiated by a tone alert, strobe lights and a computer generated verbal announcement.

Outer buildings will be a steady and continuous tone until all occupants are evacuated and the alarm is acknowledged.

PERMIT # _____

HOT WORK PERMIT – SINGLE SHIFTFor torch & abrasive wheel cutting, welding, soldering, brazing or spark producing work.**LEAVE NO SPACES BLANK****Section I: Pre-assessment must be completed prior to commencement of hot work.**

Date of work:	Shift Requested <input type="checkbox"/> 1 st , <input type="checkbox"/> 2 nd , <input type="checkbox"/> 3 rd shift
Building location of work:	Floor Location:
Service Area:	Room # (s):
Person Performing Work:	Company:
Fire Watch Name:	Authorizing Agent:
Work to be done: <input type="checkbox"/> Welding, <input type="checkbox"/> Soldering, <input type="checkbox"/> Cutting, <input type="checkbox"/> Grinding. Description: _____	

Initials	Pre-inspection / Precautions checklist to be completed BEFORE permit will be issued.
	Measures in place so smoke or burning odors cannot be detected by patients, personnel, or detection devices.
	Sprinklers in service.
	Cutting and welding equipment in good repair.
	WITHIN 35 FEET OF WORK
	Floor swept clean of combustibles.
	Combustible floors wet down, covered with damp sand or non combustible shields.
	Combustible materials or flammable liquids removed from area or protected with covers, guards, or shields.
	All wall and floor openings covered and covers suspended beneath work to collect sparks
	WORK ON WALLS OR CEILINGS
	Construction noncombustible and without combustible covering.
	Combustibles moved away from the opposite side of wall.
	WORK ON ENCLOSED EQUIPMENT (tanks, containers, ducts, etc.)
	Equipment cleaned of all combustibles.
	Containers purged of flammable vapors.
	FIRE WATCH (IF REQUIRED)
	To be provided entire duration of work and at least 30 minutes after operation
	Supplied with fire extinguisher and/or small hose
	Trained in the use of the equipment and in sounding the fire alarm.
Person Performing pre-inspection Print Name:	Sign Name:
Time HOT Work Started:	Time HOT Work Completed:

Section II – To be completed by the Safety Office's Life Safety Section.

Permit Issued By:	Permit expires <input type="checkbox"/> 1 st , <input type="checkbox"/> 2 nd , <input type="checkbox"/> 3 rd shift
Is fire watch required? <input type="checkbox"/> Yes, <input type="checkbox"/> No	Fire watch attests he has had extinguisher training? <input type="checkbox"/> Y <input type="checkbox"/> N
List detection / suppression devices/systems disabled for the duration of work and initial when re-enabled:	

Time Permit Returned:	Comments:

Section III – To be completed by the fire watch.

Work area and all adjacent areas to which sparks and heat might have spread (including floors above, below and on opposite sides of walls) inspected 30 minutes after hot work completed and found free of any indication of fire.	
Signature of Fire Watch: _____	Time: _____

Instructions on back.*Revised May 08*

INSTRUCTIONS

Hot Work Permits. Contractors and VA Connecticut personnel performing hot work shall request a Hot Work Permit from the Safety Office's Life Safety Section a minimum of 24 hours in advance unless, due to nature of work, the Safety Office's Life Safety Section agrees that a permit can be issued in less time.

1. Permit completion process.

- The first part of Section I is completed at the time the permit is issued. The pre inspection is performed and documented prior to commencement of the actual hot work.
- The safety Office's Life Safety Section's Life Safety Section will determine if a fire watch is required, and issue the permit with a sequential permit number.
- The COTR or other authorized person shall disable such fire detection/suppression devices as are deemed necessary in order to avoid a false alarm. If it is not feasible to disable certain devices, the Safety Office's Life Safety Section's Life Safety Section may approve an alternative method such as bagging a detector.
- The Hot Work Permit will be issued for the period necessary to perform such work. In the event the time necessary will exceed eight hours, a separate permit must be requested and issued.
- Once issued, the permit will be posted in a conspicuous place in the immediate area where the work is being performed.
- Permit must be returned to the Safety Office's Life Safety Section in Building 15 upon completion of the final fire watch inspection.

2. Required safety precautions for Hot Work:

- No work will be performed in any area open to or viewable by patient or employee traffic.
- **Sealing spaces, negative air pressure, smoke eaters, and other measures will be used to ensure smoke or burning odors do not migrate from the work space to where they can be sensed or detected by patients, employees or smoke detection devices.**
- Work areas will be protected by automatic sprinklers that are operable at all times.
- The pre-inspection must be performed and compliance with all items is required.
- Welding leads and gas hoses for burning are kept out of walkways and all welding equipment will be inspected and in good working condition.
- Obtain appropriate size and type of fire extinguisher and locate it at work site. Fire watch will have extinguisher training and know how to sound an alarm if a fire cannot be easily extinguished.
- **The fire watch must continue for at least 30 minutes after the hot work is complete.** Look for any smoldering and inspect adjoining rooms. The fire watch completes the last section of the permit.

FALSE ALARMS WILL NOT BE TOLERATED!!! Persons performing hot work are required to be familiar with the location of the smoke detectors in the work area. When performing cutting, burning, soldering, or welding or any other operations that may cause smoke or dust, the Safety Office's Life Safety Section must be notified so action can be taken to prevent false alarms. Contact the Safety Office's Life Safety Section at the West Haven campus extension 4197 and Newington campus at extension 6257. If the work requires the deactivation of part of the fire alarm, sprinkler system or standpipe fire systems, the contractor, employee and/or the authorizing agent must notify the Safety Office's Life Safety Section to deactivate the alarm in that zone. Notification must be made at least 24 hours prior so that action can be taken to ensure fire safety of the area. The system must be returned to operational mode as soon as the work is completed on each day; therefore, the Safety Office's Life Safety Section must be notified when the work is completed.

Department of Veterans Affairs
VA Connecticut Healthcare System
West Haven Campus

Facilities Management Service Policy No. 8

January 12, 2009

LOCKOUT/TAGOUT POLICY

I. POLICY:

All employees will be protected from injuries caused by **unexpected** energizing or start up of machines or equipment, or release of stored energy during service, repair, maintenance, operation, and associated activities. This policy establishes **minimum** performance requirements for the control of such potentially hazardous conditions. This will be accomplished by locking out and tagging out energy isolating devices, and otherwise disabling machines or equipment, to prevent unexpected energizing, start-up or release of stored energy.

II. DEFINITIONS:

A. Affected Employee: An employee whose job requires him/her to operate or use a machine or equipment on which maintenance or repair is being performed under this lockout/tagout policy, or whose job requires him/her to work in an area in which such maintenance or repair is being performed.

B. Authorized Individual: A knowledgeable individual to whom the supervisor has given the authority and responsibility to lock or implement a lockout/tagout procedure on machines or equipment to perform maintenance or repair. An authorized individual and an affected employee may be the same person when the affected employee's duties also include performing maintenance or repair of a machine or equipment that must be locked and tagged out.

C. Knowledgeable Individual: An individual who is qualified to operate the controls or equipment and is familiar with the effects of operation.

D. "Capable of being locked out": An energy isolating device will be considered to be capable of being locked out if it has any of the following:

- A hasp or other attachment or integral part to which, or through which, a lock can be affixed,
- A locking mechanism built into it, or
- A lockout that can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

E. Energy Isolating Device: A mechanical device that physically prevents the transmission or release of energy, including, but not limited to, the following: a manually operated electrical circuit breaker, a disconnect switch, a manually operated switch, a slide gate, a slip blind, spectacle flange, a line valve, blocks, and similar devices with a visible indication of the position of the device. (**Push buttons, selector switches, and other control-circuit type devices are not energy isolating devices.**)

F. Energy Source: Any electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy source that could cause injury to personnel.

G. Lockout Device: A device that utilizes a lock and key to hold an energy isolating device in the safe position and prevents a machine or equipment from being energized.

H. Lockout/Tagout: The placement of a lock and tag on the energy isolating device in accordance with an established procedure, indicating that the energy isolating device shall not be operated until removal of the

lock/tag in accordance with an established procedure. (The term "lockout/tagout requires the combination of a lockout device and a tagout device).

I. Maintenance and Repair: Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining machines or equipment. These activities include but are not limited to lubrication, cleaning or unjamming machines or equipment and making adjustments or tool changes, where the employee may be exposed to the **unexpected** start-up of the equipment or release of hazardous energy.

J. Tagout Device: A prominent warning device, such as a tag, that can be securely attached to equipment or machinery for the purpose of warning personnel not to operate an energy isolating device and identifying the applier or authority who has control of the procedure.

III. RESPONSIBILITY:

A. Supervisor (or Acting Supervisor):

- Maintains awareness of all aspects of the Facilities Management Service lockout/tagout policy.
- Ensures that all employees under their supervision understand the requirements for compliance with this policy and are made aware of the lockout/tagout procedure and are issued appropriate locks/tags.
- Conducts a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this policy are being followed.
- Certifies that the periodic inspections have been performed.
- Maintains lockout/tagout log book.

B. Employee: Maintains awareness of all aspects of the lockout/tagout policy and complies with all procedures. Entry of items locked out in lockout/tagout log book.

C. Safety Office:

- Provides necessary employee training for lockout/tagout procedures.
- Conducts periodic inspections of work sites to ensure compliance with lockout/tagout procedures.
- Provides guidance regarding the applicability of the lockout/tagout policy.
- Approves/disapproves exceptions of the lockout/tagout policy.

IV. PROCEDURES:

A. Lockout/Tagout:

1. Implementation of lockout/tagout shall be performed only by authorized employees.
2. Before any employee performs any maintenance or repair of a machine or equipment where unexpected start up or release of stored energy could occur and cause injury, the machine or equipment shall be isolated, and rendered inoperative.
3. If an energy-isolating device is capable of being locked out, then this policy requires that a lockout and tagout be utilized. If an energy-isolating device is not capable of being locked out, then a tagout shall be utilized.
4. Whenever major replacement, repair, renovation or modification of machines or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machines or equipment shall be designed to accept a lockout device.
5. The following devices contain high voltage power supplies that can be tagged out, but not locked out: Procedures during repairs on above devices shall include at least two persons. One person shall be at the disconnect area, while the other person performs repair and/or testing.

B. Energy Control Procedure:

1. Facilities Management Service (FMS) shall develop, document and utilize procedures to control potentially hazardous energy when employees are engaged in the activities covered by this policy.

Exceptions to this requirement are listed in Appendix 1. It should be noted that most maintenance and repairs at the facility would be covered by one or more of these exceptions.

2. Procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy. The means to enforce compliance include, but are not limited to, the following:

- A specific statement of the intended use of the procedure;
- Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;
- Specific procedural steps for the placement, removal and transfer of lockout devices or tagout devices and the responsibility for them; and
- Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

3. Protective Materials and Hardware:

A. Lockout and tagout devices shall be provided by the supervisor of each shop and shall be the only authorized device(s) used for lockout/tagout of energy devices and shall not be used for other purposes.

B. Lockout devices are identified by the word "SAFETY" stamped in red on each device. Each lockout device is to be stamped with the employee's name and color coded to indicate type of trade or craft. Each employee will be issued two keys and no two key configurations shall be the same. No one else shall have duplicate keys. Proper tags are shown in Appendix 2.

C. Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Attachment means shall be a one-piece, nylon cable tie that shall be non-reusable, self-locking and non-releasable with a minimum unlocking strength of no less than 50 pounds.

4. Periodic Inspections:

A. The shop supervisor will conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedures and the requirements of this policy are being followed.

B. The periodic inspections shall be performed by an authorized shop employee other than the one(s) utilizing the energy control procedure being inspected. The inspections shall be designed to correct any deviations or inadequacies observed.

C. Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

D. The inspector shall certify that the periodic inspections have been performed. The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection and the person performing the inspection.

Copies of the inspection report shall be sent to the supervisor of the shop involved and the Safety office.

5. Training and Communication:

A. The Safety office will provide joint training to ensure that the purpose and function of the energy control program is understood by employees and that the knowledge and skills required for the safe application, usage, and removal of energy controls are required by employees. The training will include the following:

1. Recognition of hazardous energy sources, the type and magnitude of the energy available in the workplace, and methods and means necessary for energy isolation and control.
2. Instruct each affected employee in the purpose and use of the energy control procedure.
3. Instruct all other employees whose work operations are or may be in an area where energy control procedures may be utilized, about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment that are locked out or tagged out.
4. Train employees in the limitations of tags when tags are used in lieu of lockout devices.

Retraining will be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

5. Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever there is reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of energy control procedures.

B. The Safety office will certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

6. Procedures(Appendix 2) (Appendix 3- Lockout/Tagout Checklist)

A. Preplanning for Lockout (Preparation for Shutdown)

1. An initial survey shall be made to determine which switches, valves, or other energy isolating devices apply to the equipment being locked out. More than one energy source (electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or others) may be involved. Any questionable identification of sources shall be cleared by the employees with their supervisors. Before lockout commences, job authorization should be obtained from the supervisor.

2. Only supervisors or authorized individuals shall prescribe the appropriate duties and responsibilities relating to the actual details of affecting the lockout/tagout. Energy isolating devices shall be operated only by authorized individuals or under the direct supervision of authorized individuals. Where high voltages greater than 480V are involved, the supervisor electrician shall be responsible for turning off the main power controls.

3. All energy isolating devices shall be adequately labeled or marked to indicate their function. The identification shall include the following:

- equipment supplied
- energy type and magnitude

4. Where system complexity requires, a written sequence in checklist form should be prepared for equipment access, lockout/tagout, clearance, release, and start-up.

a. Lockout/Tagout Procedures (Appendix 2)

1) **Preparation.** Notify all affected employees that a lockout is required and the reason therefore.

2) **Machine or Equipment Shutdown.** If the equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.). Disconnect switches should never be pulled while under load, because of the possibility of arcing or even explosion. Personnel knowledgeable of equipment operation should be involved with shut down or re-start procedures.

3) **Machine or Equipment Isolation.** Operate the switch, valve, or other energy isolating device so that the energy source(s) (electrical, mechanical, hydraulic, etc.) is (are) disconnected or isolated from the equipment. Stored energy, such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc., must also be dissipated, disconnected, or restrained by methods such as grounding, repositioning, blocking, bleeding-down, etc. Pulling fuses is not a substitute for locking out. A yanked fuse is no guarantee the circuit is dead, and even if it were dead, there is nothing to stop someone from unthinkingly replacing the fuse.

CAUTION: Intermittently operating equipment such as pumps, blowers, fans, and compressors may seem harmless when dormant. Don't assume that because equipment isn't functioning, it will stay that way.

4) **Application of Lockout/Tagout.** Lockout and tag the energy isolating device with an assigned individual lock, even though someone may have locked the control before you. You will not be protected unless you put your own padlock on it. For some equipment it may be necessary to construct attachments to which locks can be applied. An example is a common hasp to cover an operating button. Tags shall be attached to the energy isolating device(s) and to the normal operating control and shall be attached in such a manner as to preclude operation.

5) **Verification of Isolation.** After ensuring that no personnel can be exposed and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. If there is a possibility of accumulating stored energy to a hazardous level, verification of isolation shall be continued until the maintenance or repair is completed, or until the possibility of such accumulation no longer exists.

CAUTION: Return operating controls to neutral position after the test. A check of system activation (e.g. use of voltmeter for electrical circuits) should be performed to assure isolation.

The equipment is now locked out.

b. Release from Lockout/Tagout

- 1) Before lockout or tagout devices are removed and energy is restored to the machine or equipment, inspect the work area to ensure that nonessential items have been removed and to ensure that machine or equipment components are operationally intact.
- 2) Check work area to ensure that all employees are in the clear.
- 3) Notify affected employees that lockout/tagout devices have been removed.
- 4) Each lockout/tagout device shall be removed from each energy isolating device by the employee who applied the device. The energy isolating devices may be opened or closed, i.e., circuit breakers, to restore energy to equipment.

c. Lockout/Tagout Interruption (Testing of Energized Equipment)

In situations where the energy isolating device(s) is locked/tagged and there is a need for testing or positioning of the equipment/process, the following sequence shall apply:

- 1) equipment/process of tools and materials.
- 2) Clear personnel.
- 3) Clear the control of locks/tags according to established procedure.
- 4) Proceed with test, etc. De-energize all systems and re-lock/re-tag the controls to continue the work.

a. Outside Personnel (Contractors, etc.)

- 1) Whenever outside service personnel are to be engaged in activities covered by the scope and application of this policy the Safety office and **all** contractors (including on-site contractors) shall inform each other of their respective lockout or tagout procedures.
- 2) The Safety office shall ensure that FMS personnel understand and comply with the restrictions and prohibitions of any contractor's energy control procedures. Contractors shall ensure that their personnel do likewise for FMS policies as well as other contractor's policies.

b. Procedure Involving More Than One Person

In the preceding steps, if more than one individual is required to lock out equipment, each shall place a personal lock and tag on the group lockout device when he/she begins work, and shall remove those devices when he/she stops working on the machine or equipment. The supervisor, with the knowledge of the crew, may lock out equipment for the whole crew. In such cases, it shall be the responsibility of the supervisor to carry out all steps of the lockout procedure and inform the crew when it is safe to work on the equipment. Additionally, the supervisor shall not remove a crew lock until it has been verified that all individuals are clear.

c. Shift Change Coordination

Supervisors shall ensure the continuity of lockout/tagout protection during shift or personnel changes. Each worker shall be responsible for removing his own padlock and tag at the completion of his shift. If work is to cease until the following day the supervisor shall place his personal padlock and tag on the equipment and the workers shall remove their padlocks and tags. When work resumes the workers shall affix his personal lock and tag to the equipment and the supervisor shall remove his lock and tag.

d. Conditions for Padlock Removal by the General Foreman

- 1) Lockout/tagout devices shall be removed only by the owner of the device except in the following situations:
- 2) Owner incapacitated by illness, etc.
- 3) Owner no longer works for FMS
- 4) Owner is on flex or leave and cannot be reached by telephone. If the owner is reached and the situation warrants then he/she will be required to come to work and remove the padlock.
- 3) If the General Foreman determines that circumstances warrant the removal of a lockout/tagout device, every effort must be made to contact the owner of the device. After the above conditions have been met the General Foreman may remove the device in the presence of a member of the Safety office. A padlock shall not be cut but may be removed by changing the core of the lock.

APPENDIX 1

EXCEPTION: It is not necessary to document the required procedure for a particular machine or equipment, when all of the following elements exist:

1. the machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down which could endanger employees;
2. the machine or equipment has a single energy source which can be readily identified and isolated;
3. the isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment;
4. the machine or equipment is isolated from that energy source and locked out during servicing or maintenance;
5. a single lockout device will achieve a locked-out condition;
6. the lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance;
7. the servicing or maintenance does not create hazards for other employees; and
8. the shop supervisor, in utilizing this exception, has had no accidents involving the unexpected activation or start-up of the machine or equipment during maintenance or repair activities.

APPENDIX 2

PROCEDURE: The established procedure for the application of lockout/tagout shall cover the following elements and actions and shall be done in the following sequence.

1. **Preparation for shutdown.** Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.
2. **Machine or equipment shutdown.** The machine or equipment shall be turned off or shut down using the procedures required by this standard. An orderly shutdown must be utilized to avoid any additional or increased hazards(s) to employees as a result of equipment de-energization.
3. **Machine or equipment isolation.** All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).
4. **Lockout or tagout device application.**
5. **Stored energy.** Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe. If there is a possibility of reaccumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.
6. **Verification of Isolation.** Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and de-energization of the machine or equipment have been accomplished.
7. **Release from lockout or tagout.**

Lockout Checklist

Step 1: Before Beginning to Service Equipment

Have the type and amount of energy source on the equipment been identified?

Yes	No	NA
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Have the possible dangers related to the energy source being controlled been identified?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Are the steps necessary to control the energy source understood?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Have all affected employees been notified when the equipment will be shut off for service?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Step 2: Shut Down Equipment

Have the company's safety procedures been followed?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Have the manufacturer's instructions been referred to?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Step 3: Isolate the Machine or Equipment

Has the main breaker or control switch been shut off?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Have valves been closed?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Have process lines been disconnected?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Step 4: Attach Lock and Tag

Have the lock and tag been attached?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Step 5: Control Stored Energy

Has the electrical capacitance been bled?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Have pressure or hydraulic lines from the work area been vented or isolated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Have tanks been drained?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Are switches or levers that could be moved into the start position blocked, clamped or chained?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Are lines containing process materials that are toxic, hot, cold, corrosive or asphyxiating cleared?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Step 6: Verify That the Energy State is at Zero

Have the start switches on the equipment been tested?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Have pressure gauges been checked to insure that lines are depressurized?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Are blocks or cribs secure?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Have electrical circuits been checked to verify that voltage is at zero energy?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Are blanks, used to block feed chemicals, secure and not leaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

Step 7: If you have answered yes to the above steps, begin working.



APPENDIX #
LOCKOUT/TAGOUT PROCEDURE/CHECKLIST
ENERGY SOURCE DETERMINATION

DATE: _____

CONDUCTED BY: _____

In order to determine all energy sources for each piece of equipment, all questions must be answered. If the question does not apply, write N/A in the blank. Circle "yes" or "no" or fill in the blank.

Location: _____ Work Center: _____

Line: _____ Equipment No. _____

Equipment Name: _____ Model: _____

Serial No.: _____ Lockout/Tagout Procedure No. Assigned: _____

1. Does this equipment have:

- a. Electric power (including battery)? YES/NO
if yes, Motor Control Center (MCC) or power panel and
breaker number _____

Does it have a lockout device? YES/NO

Battery location: _____

Battery disconnect location: _____

- b. Mechanical power? YES/NO

Mark each type of energy source that applies:

1. Engine driven? YES/NO

If yes, switch or key location _____

Is lockout device installed? YES/NO

If no, method of preventing operation _____

2. Spring loaded? YES/NO

If yes, is there a method of preventing spring activation?
YES/NO

If no, how can spring tension be safely released or
Secured? _____

APPENDIX E

LIST OF ALL LOCKOUT PROCEDURES

PROCEDURE NO.

EQUIPMENT, MACHINERY OR PROCESS

L/O- - - -

Safe Startup Checklist

Step 1: Inspect the Area

Are all machine components operational?

Yes

☐

No

☐

NA

☐

Are all safety guards in place?

☐☐☐

Have all tools been removed from the machine?

☐☐☐

Have all braces, pins, blocks and chains been removed?

☐☐☐

Are all pressure tubing, pipes and hoses connected with valves closed?

☐☐☐

Is the work area clear for mechanical operation?

☐☐☐

Step 2: Remove Lockout Devices and Tags

☐☐☐

Step 3: Notify Affected Employees

Is the work area cleared before starting up the equipment?

☐☐☐

Has the servicing been completed and the locks and tags removed?

☐☐☐

Step 4: If you answered yes to all the above, start up the equipment.

Energy Control Diagram

Plan # _____ Page# _____ of _____

Machine # _____

Machine name _____

Department _____

Approved by _____

Special Lockout/Tagout Instructions

List any special instructions for this machine here:



This lock/tag may
only be removed by:

Name: _____

Dept.: _____

Expected Completion: _____

BRADY SIGNMARK® DIV. CAT. NO. 66063



This energy source has
been LOCKED OUT.

Unauthorized removal of
this lock/tag may result
in immediate discharge.
Remarks: _____

NO. 8291 P.

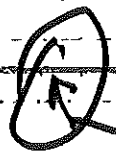
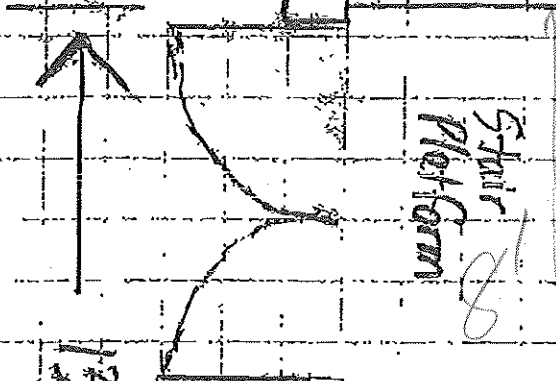
DEC. 31. 2009_11:26AM

VA-Bld-2

$\frac{1}{4}'' = 1' - 0''$

Stair platform
EL 4'-0" A.F.F.
of AHU-5 Mech Room

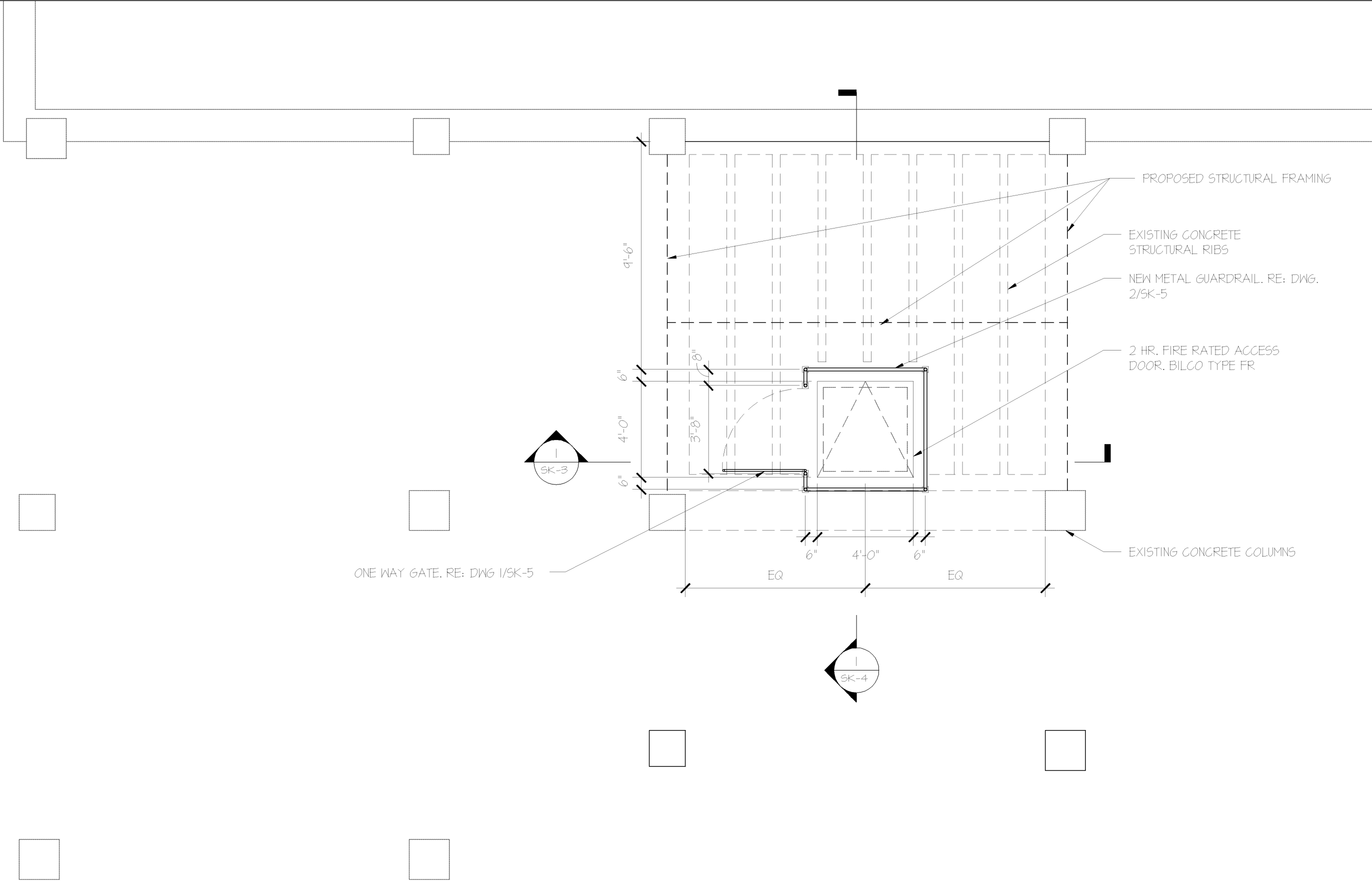
← 5'-4" →



Needed Structural Dwg of This wall showing footing
Mirza Shah.

House Keeping pad

Return Duct
AHU-5



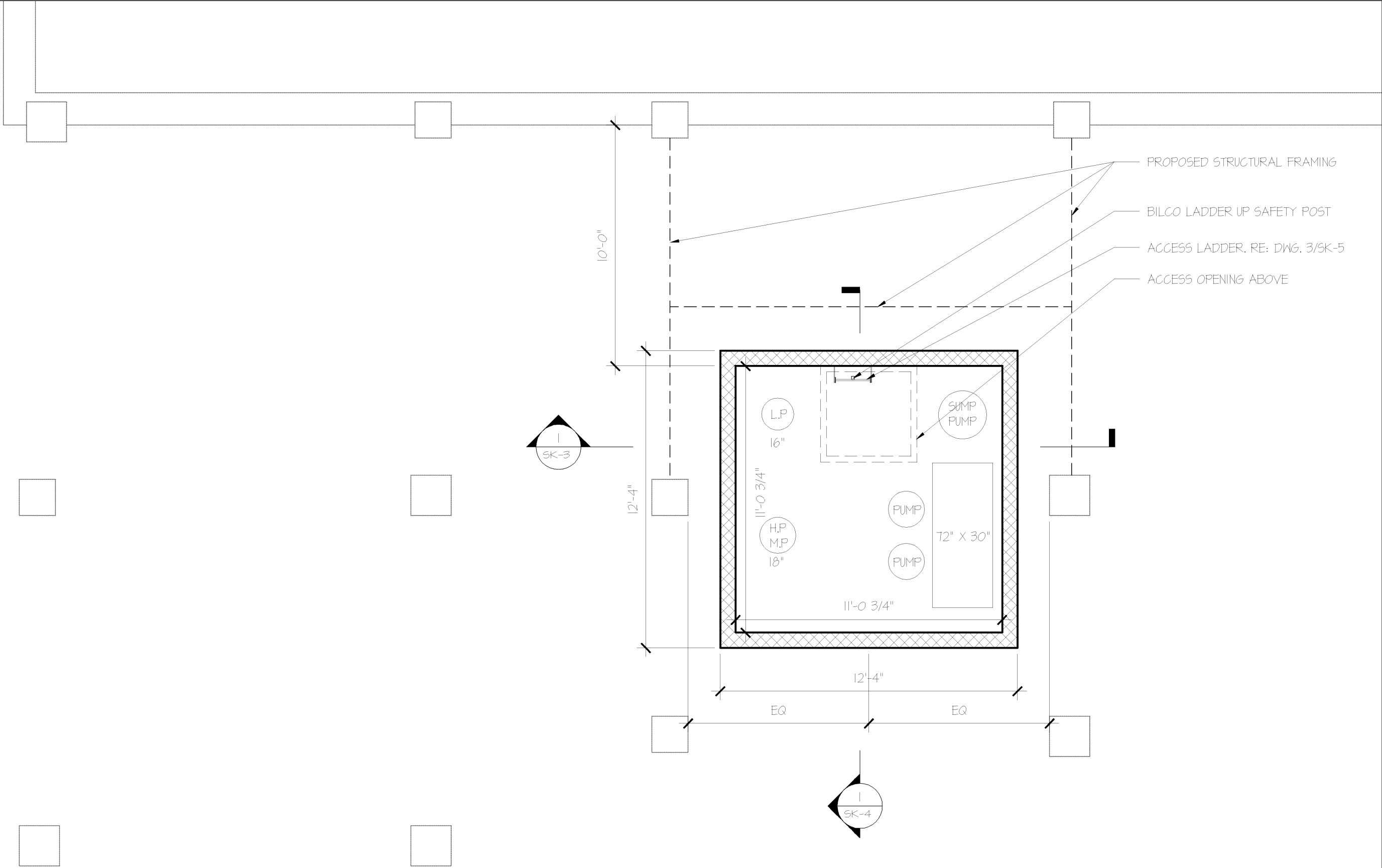
1 SUB-BASMENT PLAN
SK-1 1/4" = 1'-0"

PROJECT TITLE: **VA STEAM REPAIR** DATE: 01/13/11

DWG. TITLE: **SUB-BASEMENT PLAN** PROJECT NO.: S080790

DRAWN BY: **B. SMUCKLER** SCALE: 1/4" = 1'-0" DWG. NO.: SK-1

THREE CORPORATE DRIVE
SHELTON, CT 06484-6244



1 SUMP PIT PLAN
SK-2 1/4" = 1'-0"

PROJECT TITLE: **VA STEAM REPAIR**

DATE: 01/13/11

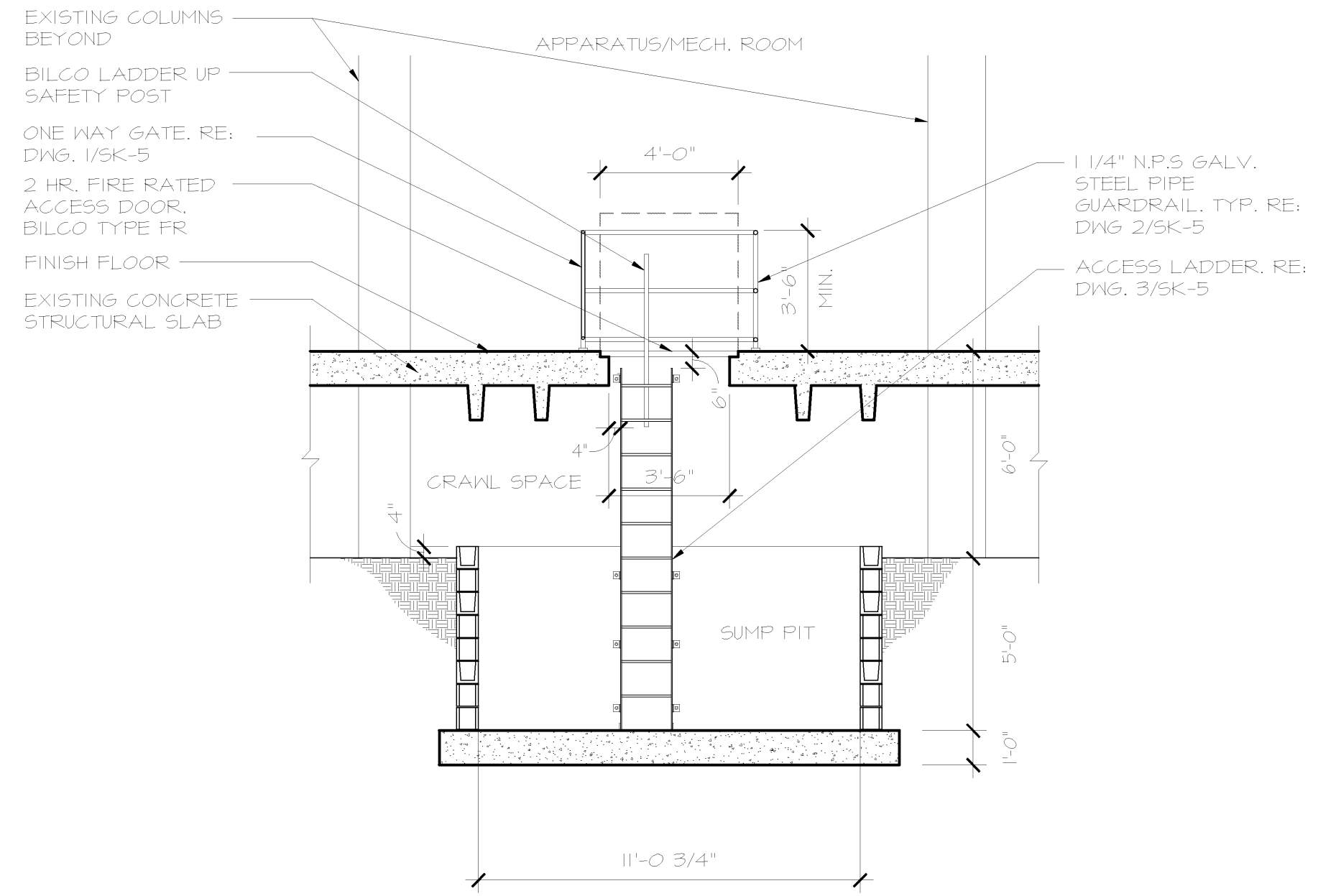
DWG. TITLE: **SUMP PIT PLAN**

PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

SCALE: 1/4" = 1'-0"

DWG. NO.: SK-2



1 SECTION
SK-3 1/4" = 1'-0"

PROJECT TITLE: **VA STEAM REPAIR**

DATE: 01/13/11

DWG. TITLE: **SECTION**

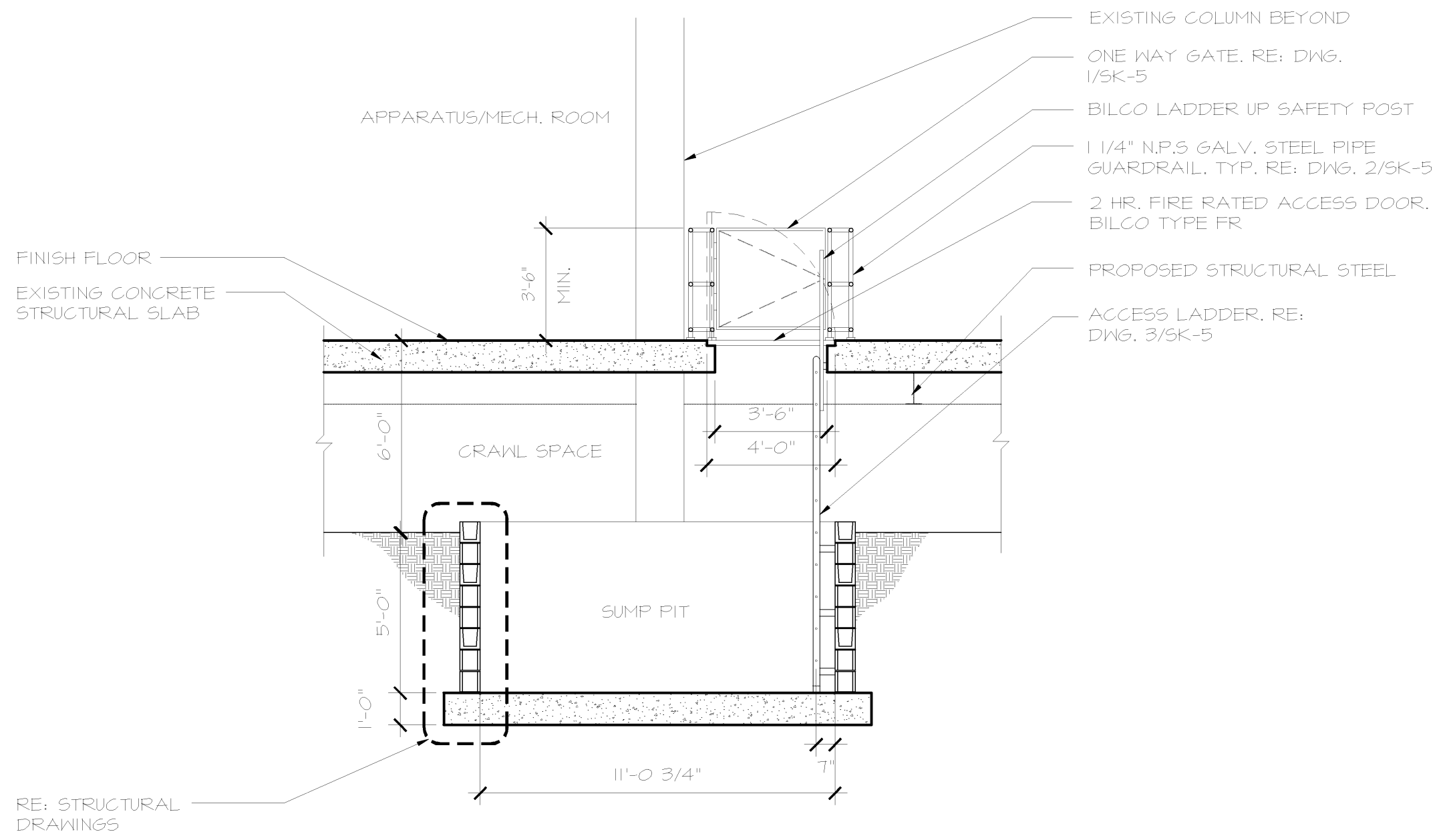
PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

SCALE: 1/4" = 1'-0"

DWG. NO.: SK-3

1 SECTION
SK-4 1/4" = 1'-0"



PROJECT TITLE: **VA STEAM REPAIR**

DATE: 01/13/11

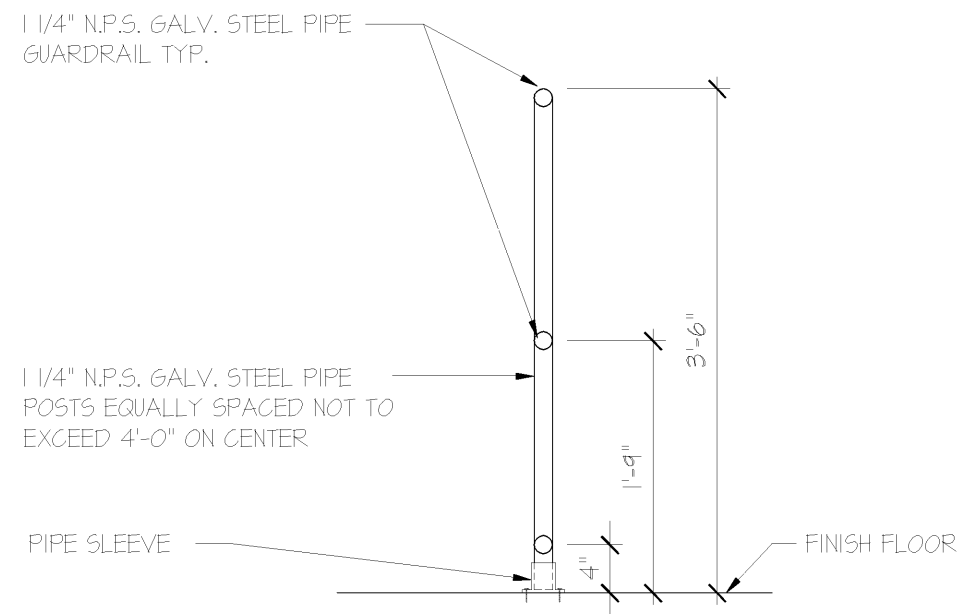
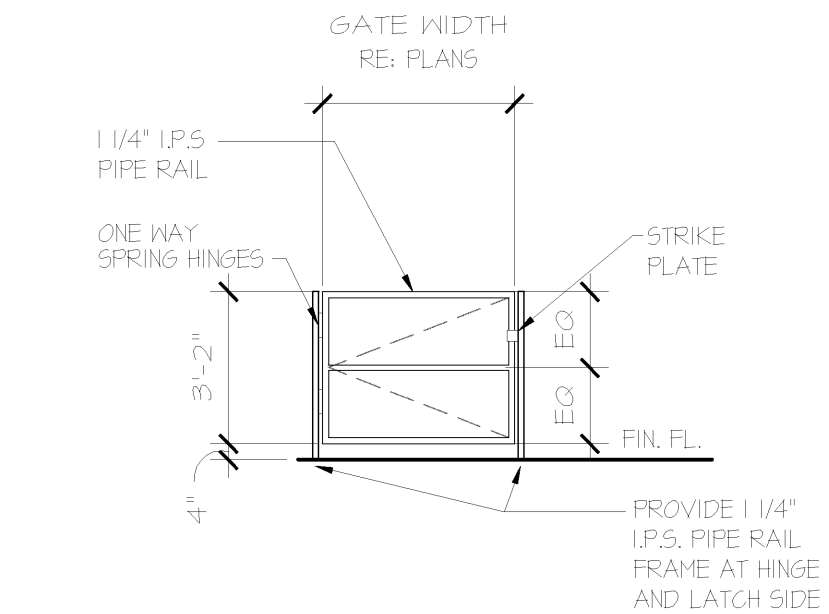
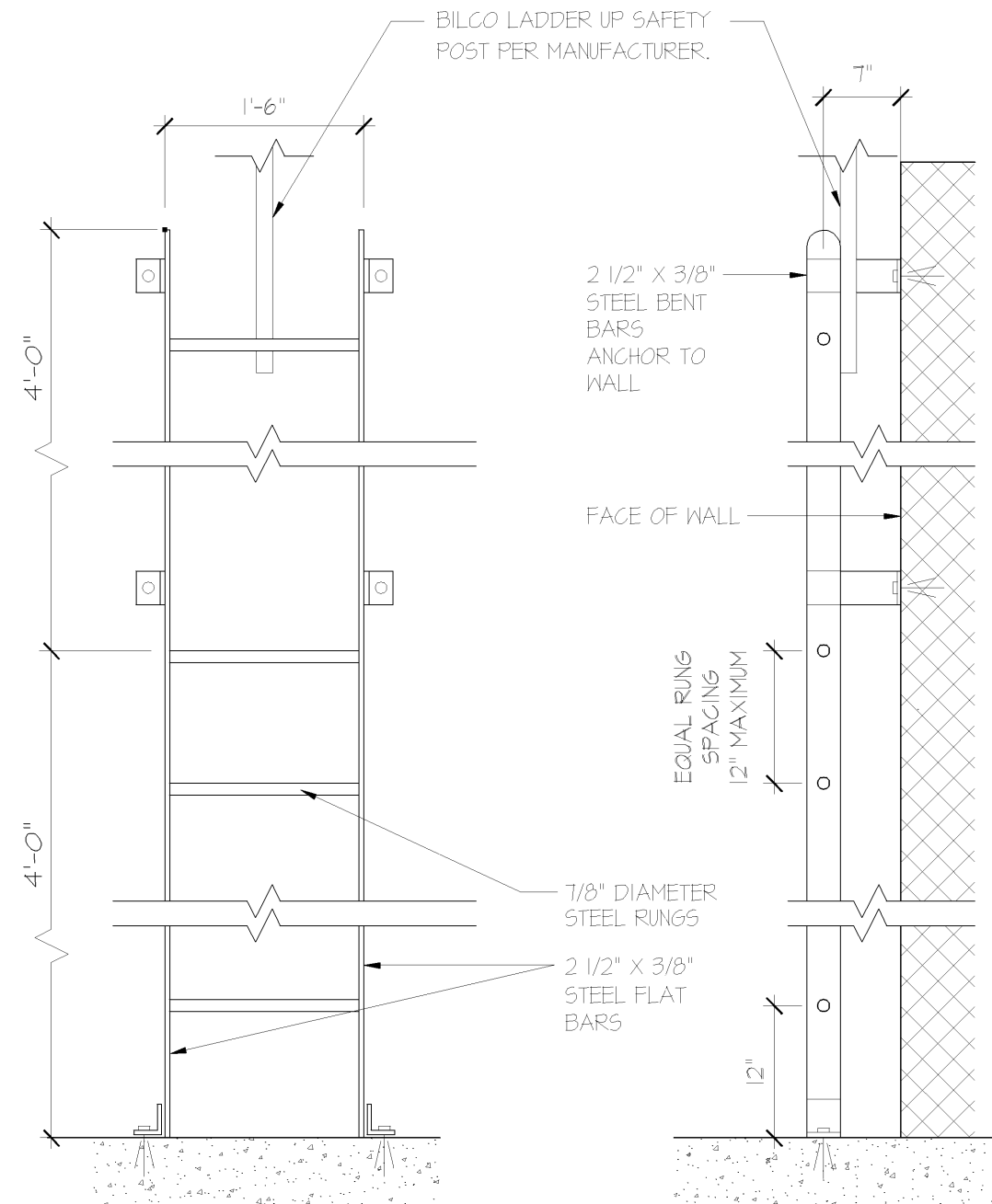
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PROJECT NO.: S080790

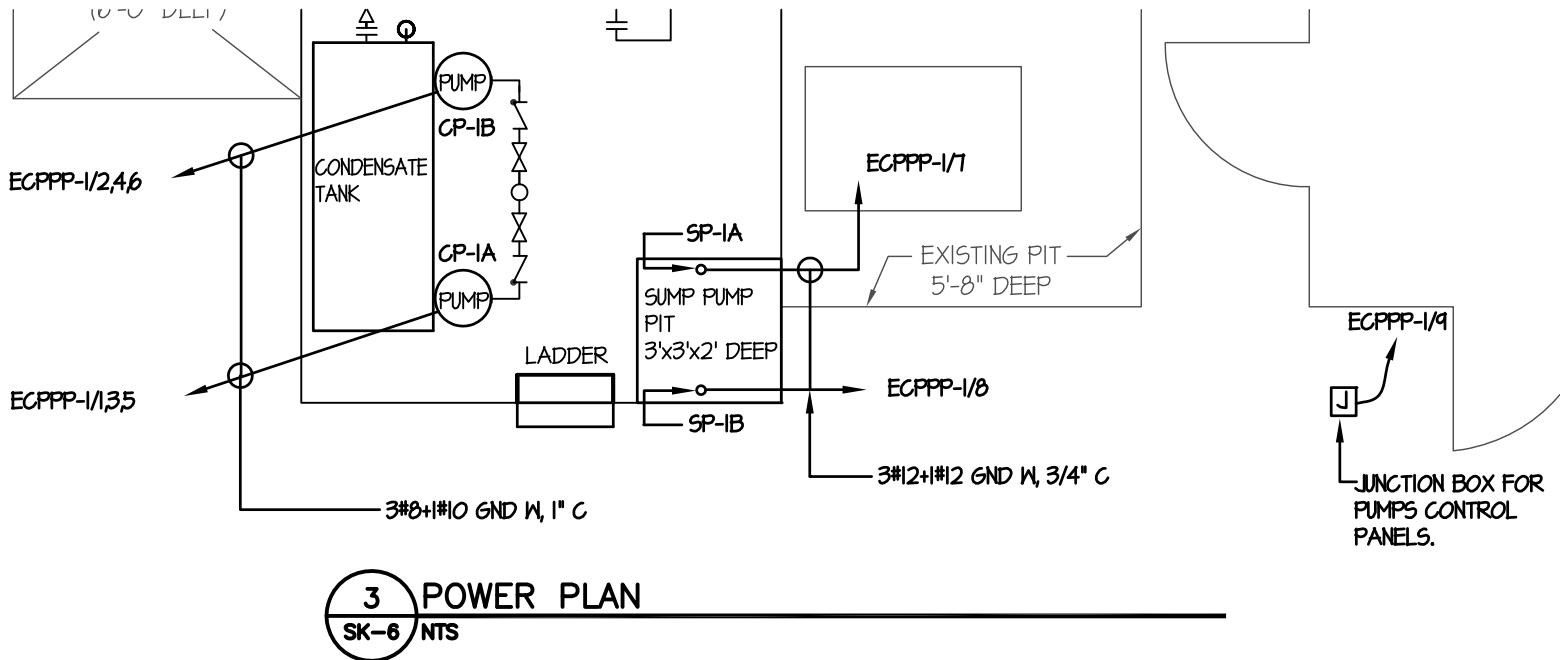
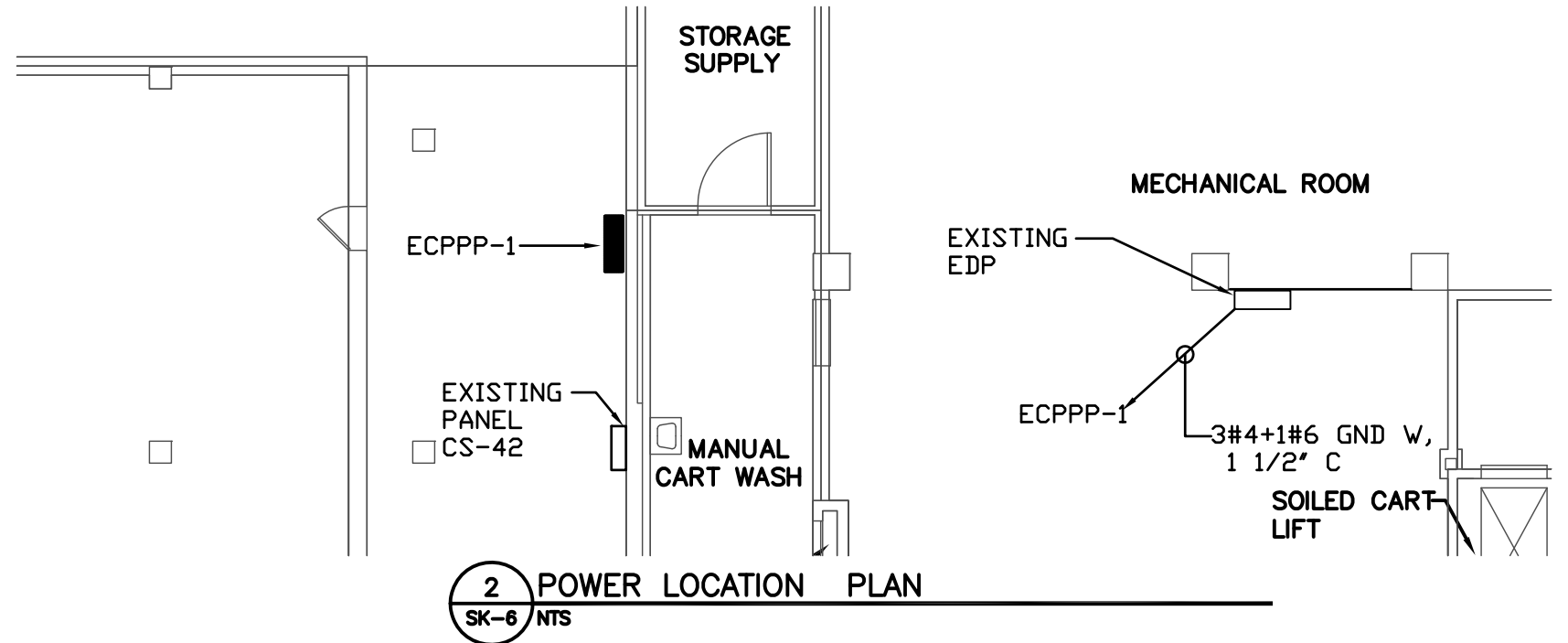
DRAWN BY: B. SMUCKLER

SCALE: 1/4" = 1'-0"

DWG. NO.: SK-4

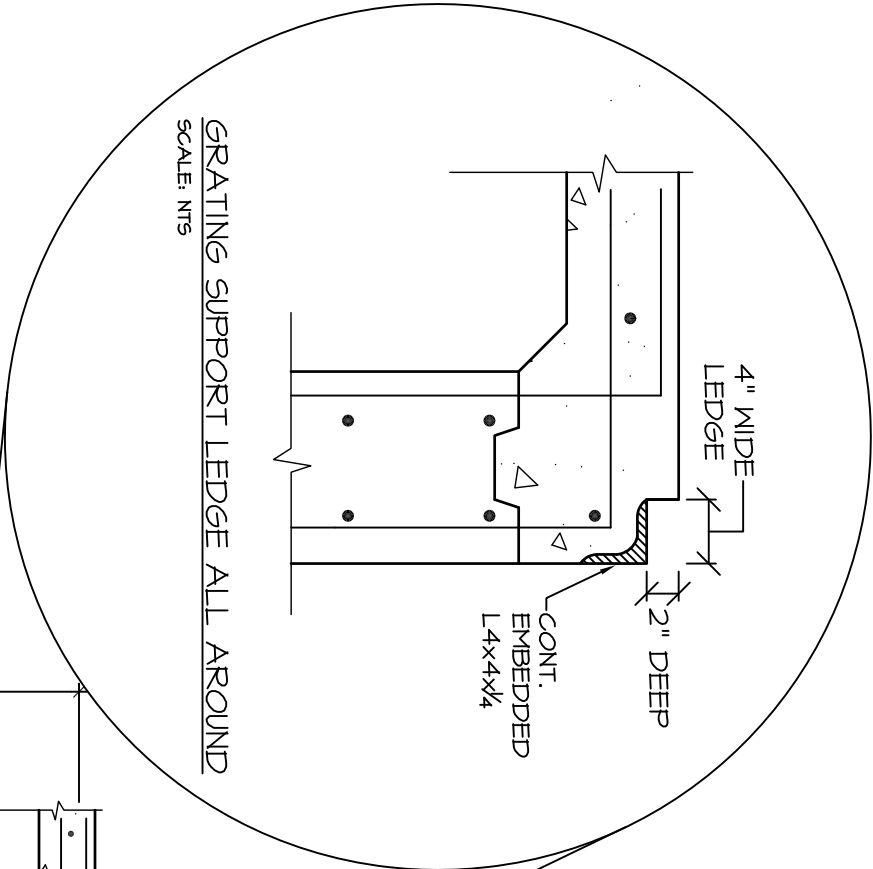


Panel Designation: ECPPP-1				A.I.C. Rating: 42K				Location: See Elec. Drawings				
Voltage: 120/208				Phase: 3		Wire: 4						
Bus Amps: 125				Main: 125 Amps		MCB		Mounting: Surface				
CKT	SERVES	TRIP	POLE	kVA	A	B	C	kVA	POLE	TRIP	SERVES	CKT
1	CP-1A	50	3	0.0	0.0	-	-	0.0	3	50	CP-1B	2
3				0.0	-	0.0	-	0.0				4
5				0.0	-	-	0.0	0.0				6
7	SP-1A	20	1	0.0	0.0	-	-	0.0	1	20	SP-1B	8
9	PUMPS CONTROL PANELS	20	1	0.0	-	0.0	-	0.0	1	20	SPACE	10
11	SPACE	20	1	0.0	-	-	0.0	0.0	1	20	SPACE	12
13	SPACE	20	1	0.0	0.0	-	-	0.0	1	20	SPACE	14
15	SPACE	20	1	0.0	-	0.0	-	0.0	1	20	SPACE	16
17	SPACE	20	1	0.0	-	-	0.0	0.0	1	20	SPACE	18
19	SPACE	20	1	0.0	0.0	-	-	0.0	1	20	SPACE	20
21	SPACE	20	1	0.0	-	0.0	-	0.0	1	20	SPACE	22
23	SPACE	20	1	0.0	-	-	0.0	0.0	1	20	SPACE	24
				0.0	0.0	0.0						
Total Connected Load:				00 kVA								
Total Connect Current:				00 Amps								
Minimum Overcurrent:				00 Amps with: 20 % Growth Factor								
Notes:												
1.												
2.												
<div><div><div>1</div><div>SK-6</div><div>NTS</div></div>ECPPP1 POWER PANEL SCHEDULE</div>												

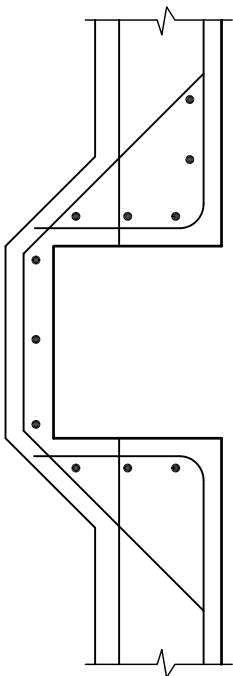


GENERAL NOTES:

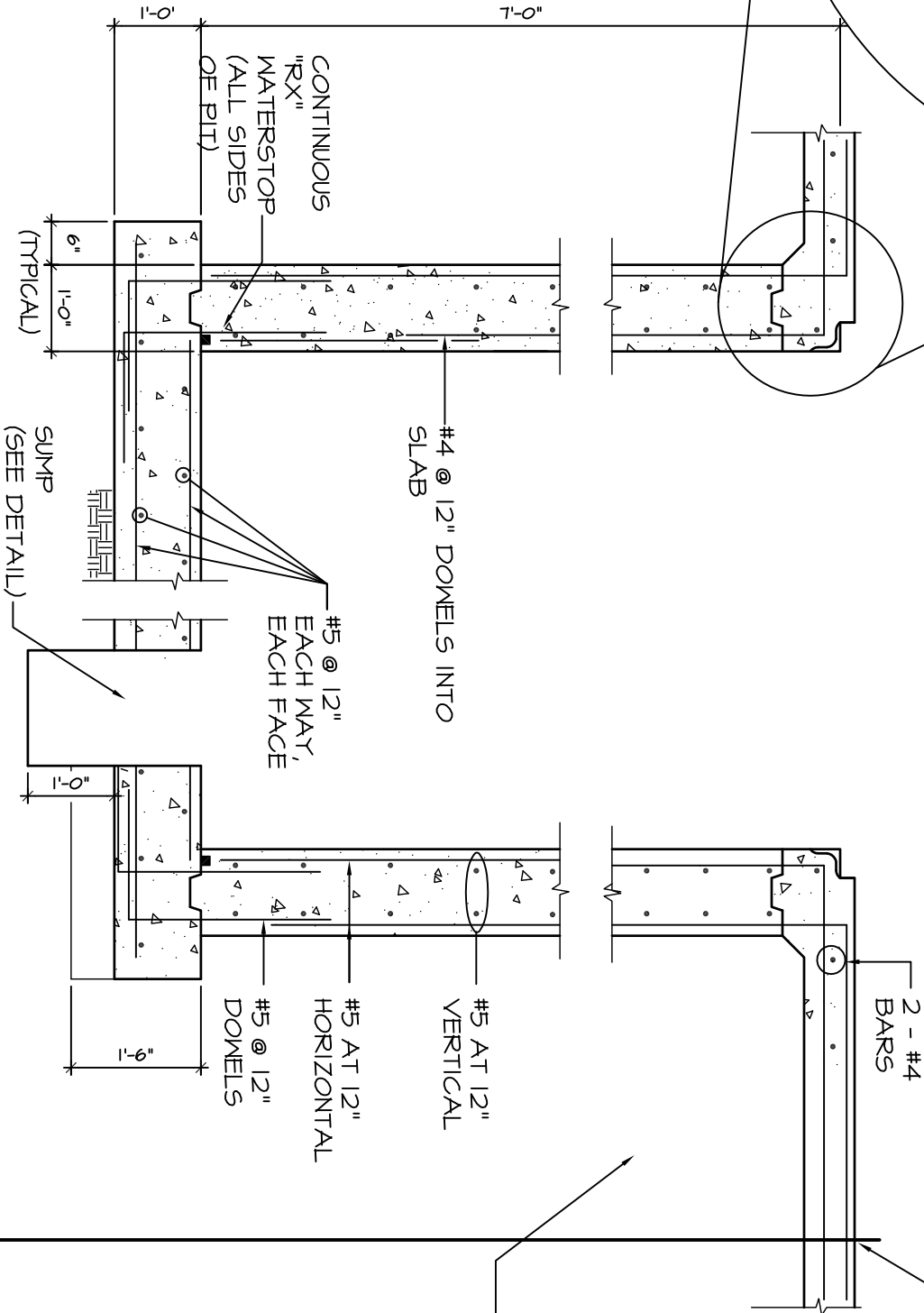
- THE SCOPE OF THE WORK OF THIS PROJECT IS TO INSTALL NEW 125 AMP, 24 SPACES POWER PANEL, 3 PHASE, 4 W AND CONNECT NEW LOADS OF TWO (2) CONDENSATE PUMPS AND TWO (2) SUMP PUMPS. INSTALL NEW SUB- PANEL ECPPP-1. INSTALL 125 AMPS, 120/208 3 PHASE CIRCUIT BREAKER TO MATCH EXISTING IN EDP PANEL. INSTALL ALL THE RACEWAYS AND CABLES SHOWN IN THE CONTRACT DRAWINGS.
- ELECTRICAL EQUIPMENT SUBJECT TO CHANGE AFTER FURTHER INVESTIGATION OF CONNECTED LOAD OF EXISTING EDP PANEL.
- PRIOR TO INSTALL ALL ELECTRICAL EQUIPMENT CONTRACTOR SHALL CONFIRM WITH THE OWNER ABOUT OVERLOAD ISSUE OF EXISTING EDP PANEL.
- WIRE PUMPS CONTROL PANELS PER MANUFACTURERS REQUIREMENTS.
- WIRE CONDENSATE AND SUMP PUMPS PER MANUFACTURERS REQUIREMENTS.
- COORDINATE THE LOCATION OF PUMPS CONTROL PANELS WITH THE MECHANICAL DRAWINGS.



GRATING SUPPORT LEDGE ALL AROUND
SCALE: NTS

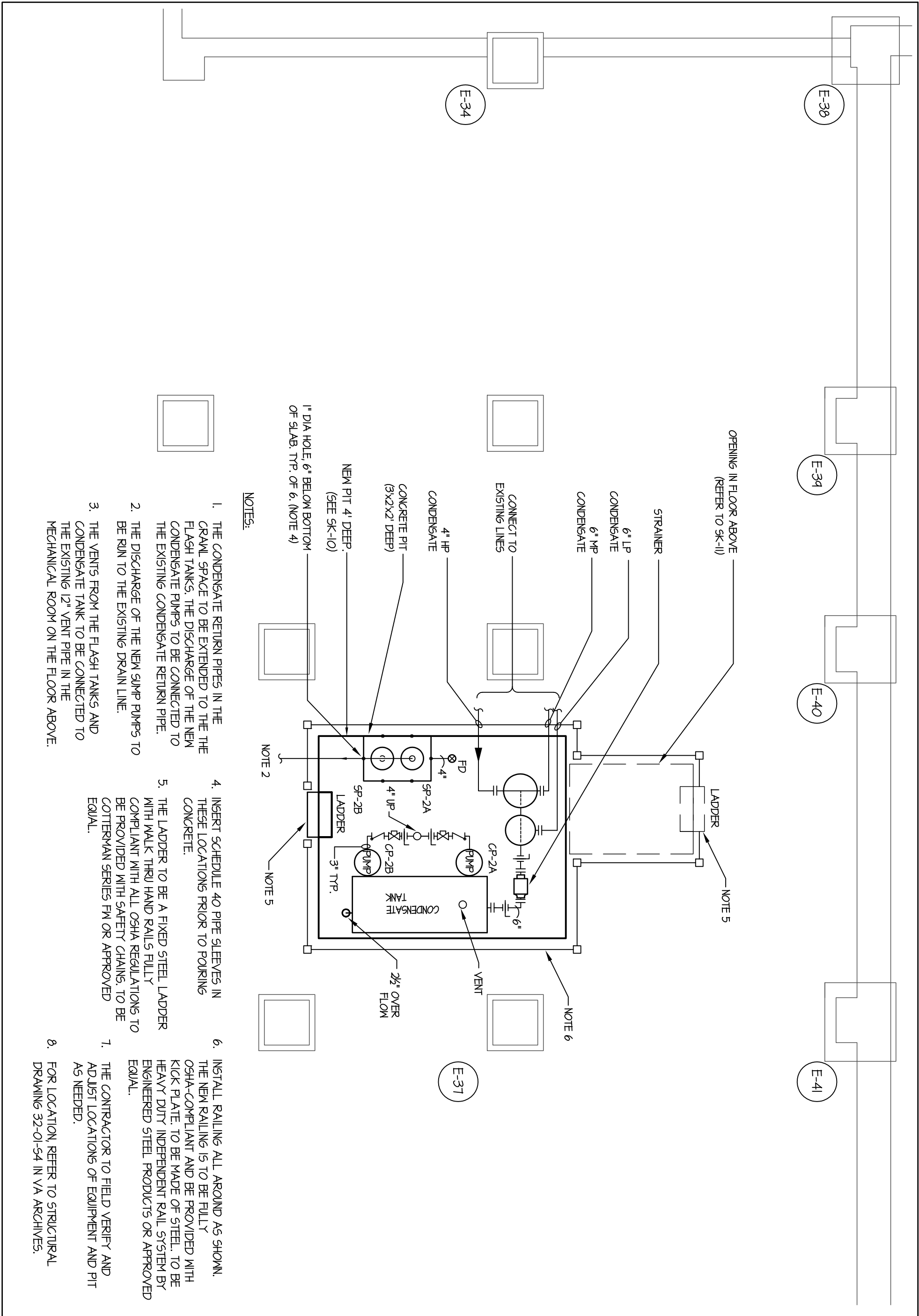


SUMP DETAIL
SCALE: NTS

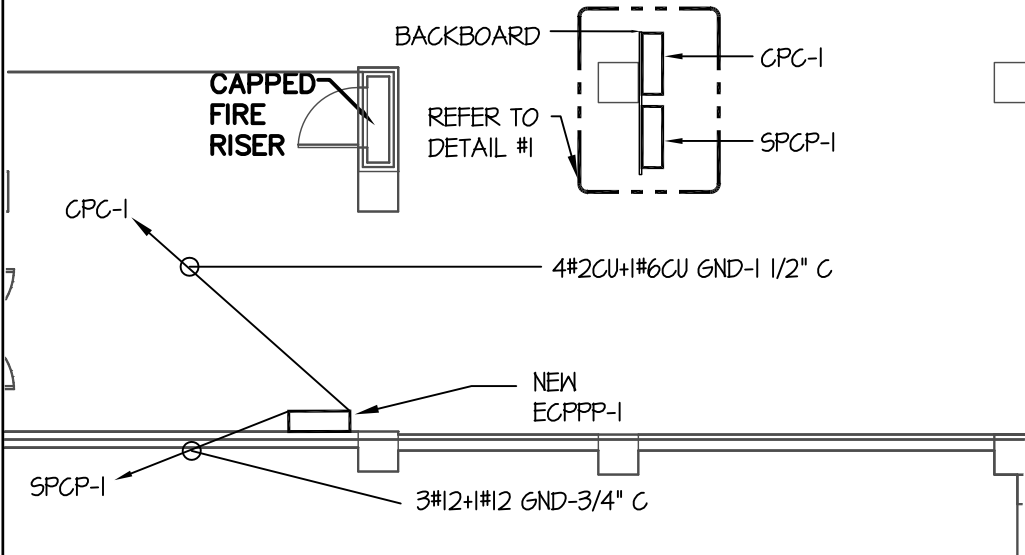


SANUCUT EXISTING SLAB
ON GRADE AND INSTALL
SHEETING TO PREVENT
UNDERMINING SLAB
BEYOND PRIOR TO
EXCAVATION.

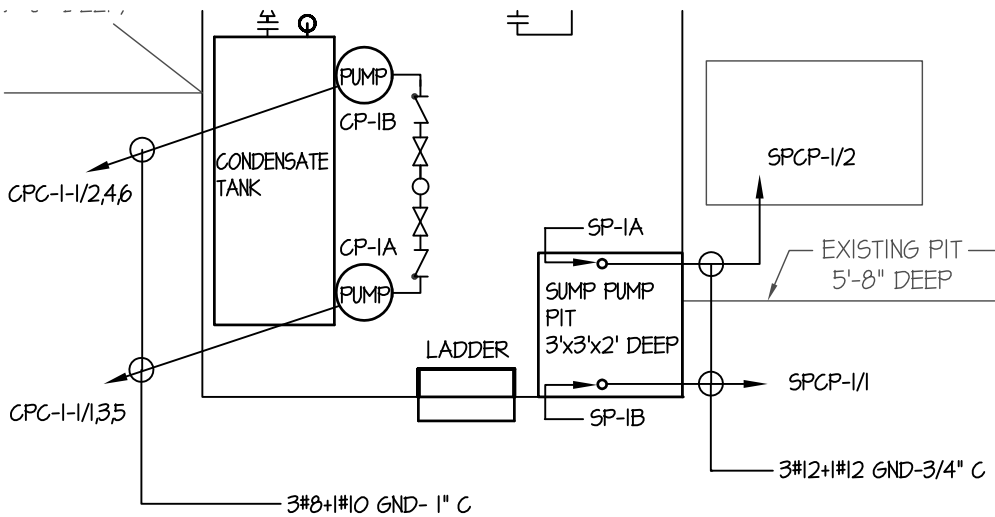
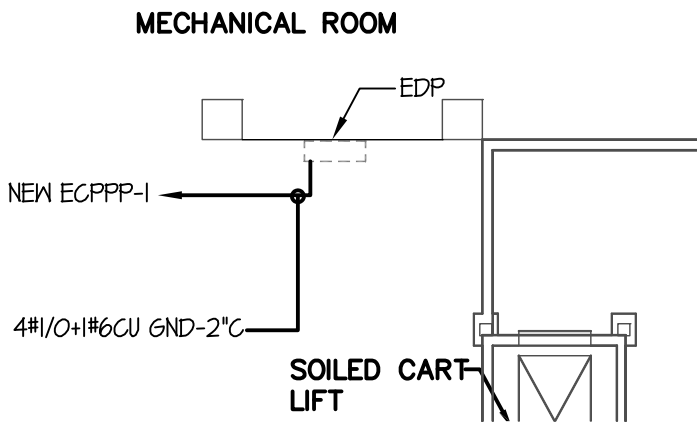
BACKFILL AFTER PIT WALLS HAVE
ATTAINED DESIGN STRENGTH



Panel Designation: ECPPP-I				A.I.C. Rating: 42K				Location: See Elec. Drawings Mech. Room 56 182				
Voltage: 120/208				Phase: 3		Wire: 4						
Bus Amps: 150				Main: 150 Amps		MCB		Mounting: Surface				
CKT	SERVES	TRIP	POLE	KVA	A	B	C	KVA	POLE	TRIP	SERVES	CKT
1	CPC-I	100	3	0.0	0.0	-	-	0.0	3	20	SPARE	2
3				0.0	-	0.0	-	0.0				4
5				0.0	-	-	0.0	0.0				6
7	SPARE	20	1	0.0	0.0	-	-	0.0	1	20	SPCP-I	8
9	SPARE	20	1	0.0	-	0.0	-	0.0	-	-	SPACE	10
11	SPACE	-	-	0.0	-	-	0.0	0.0	-	-	SPACE	12
13	SPACE	-	-	0.0	0.0	-	-	0.0	-	-	SPACE	14
15	SPACE	-	-	0.0	-	0.0	-	0.0	-	-	SPACE	16
17	SPACE	-	-	0.0	-	-	0.0	0.0	-	-	SPACE	18
19	SPACE	-	-	0.0	0.0	-	-	0.0	-	-	SPACE	20
21	SPACE	-	-	0.0	-	0.0	-	0.0	-	-	SPACE	22
23	SPACE	-	-	0.0	-	-	0.0	0.0	-	-	SPACE	24
				0.0	0.0	0.0						
Total Connected Load:				00 KVA								
Total Connect Current:				00 Amps								
Minimum Overcurrent:				00 Amps with:		20 % Growth Factor						
Notes:												
1.												
2.												



1 POWER LOCATION PLAN
SK-10/NTS

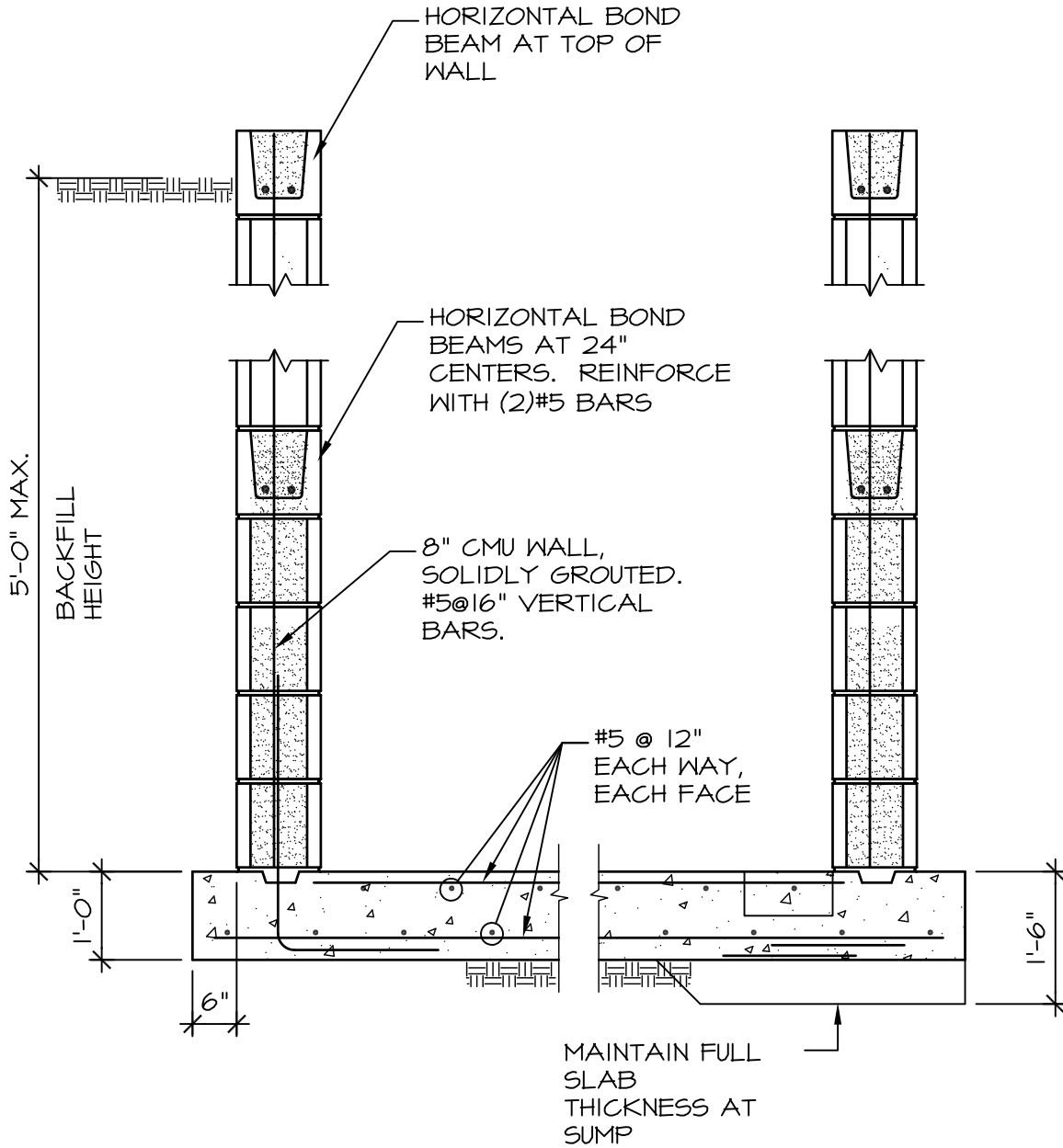


2 POWER PLAN
SK-10/NTS

3 POWER PLAN
SK-10/NTS

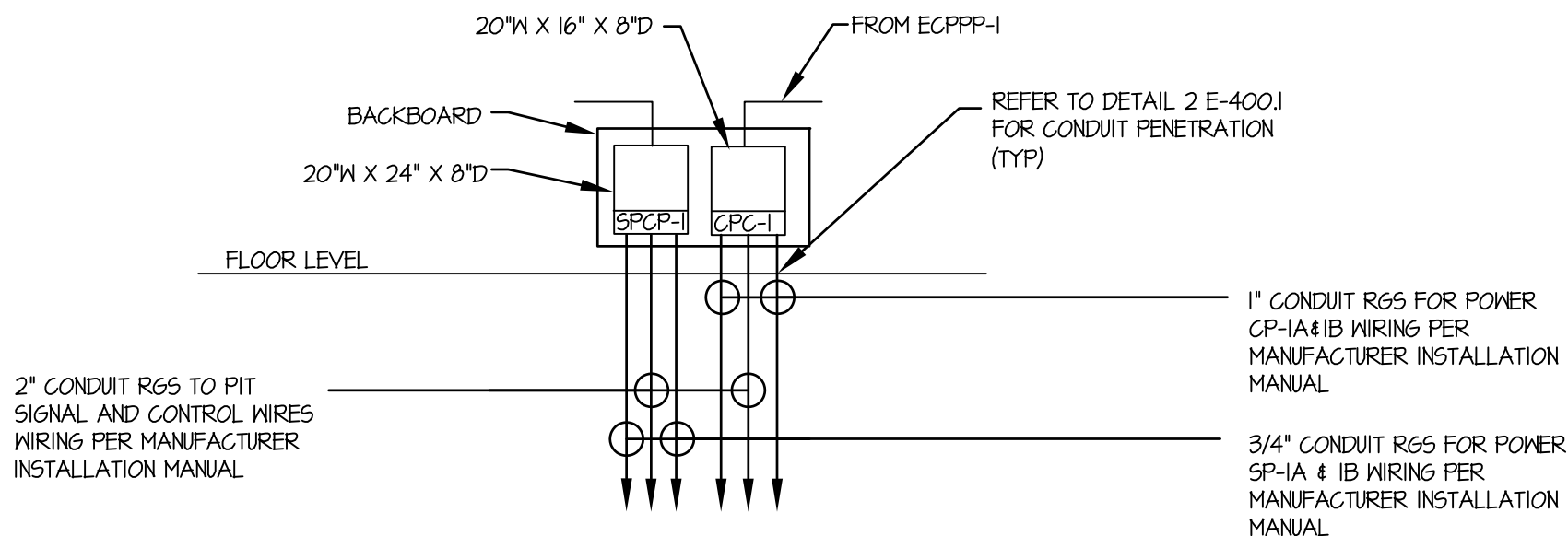
GENERAL NOTES:

- THE SCOPE OF THE WORK OF THIS PROJECT IS TO INSTALL NEW 125 AMP, 24 SPACES POWER PANEL, 3 PHASE, 4 W AND CONNECT NEW LOADS OF TWO (2) CONDENSATE PUMPS AND TWO (2) SUMP PUMPS. INSTALL NEW SUB- PANEL ECPPP-I. INSTALL 125 AMPS, 120/208 3 PHASE CIRCUIT BREAKER TO MATCH EXISTING IN PANEL EDP. INSTALL ALL THE RACEWAYS AND CABLES SHOWN IN THE CONTRACT DRAWINGS.
- ELECTRICAL EQUIPMENT SUBJECT TO CHANGE AFTER FURTHER INVESTIGATION OF CONNECTED LOAD OF EXISTING EDP PANEL.
- PRIOR TO INSTALLATION OF ALL ELECTRICAL EQUIPMENT, CONTRACTOR SHALL CONFIRM WITH THE OWNER ABOUT OVERLOAD ISSUE OF EXISTING EDP PANEL.
- WIRE PUMP CONTROL PANELS PER MANUFACTURER'S REQUIREMENTS.
- WIRE CONDENSATE AND SUMP PUMPS PER MANUFACTURER'S REQUIREMENTS.
- COORDINATE THE LOCATION OF PUMP CONTROL PANELS WITH THE MECHANICAL DRAWINGS.



CMU PUMP PIT SECTION

SCALE: 3/4" = 1'-0"



NOTES

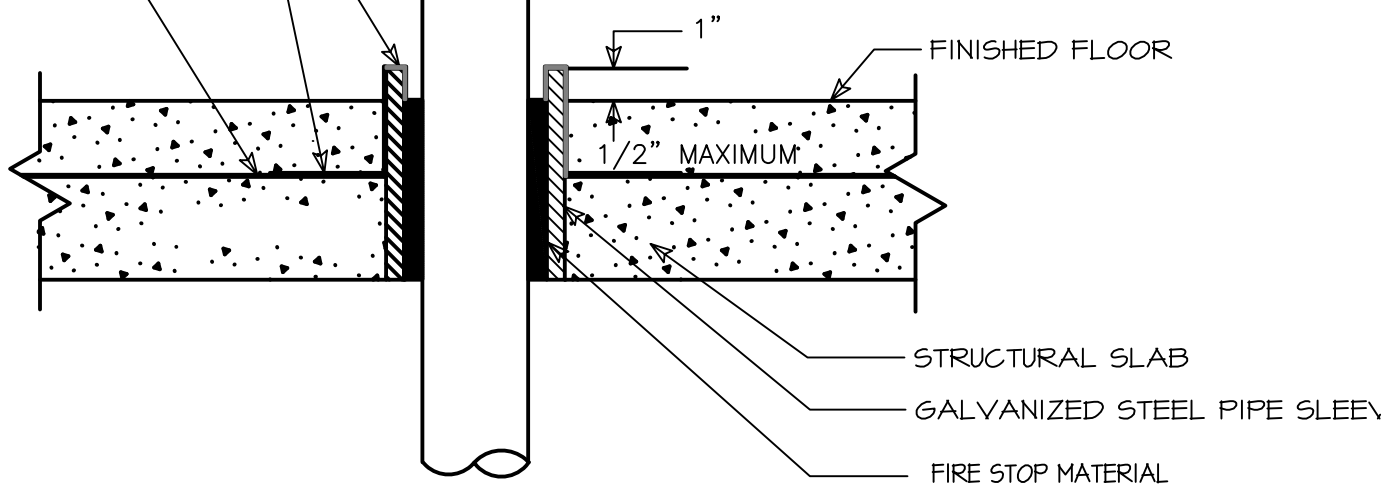
- | | | | |
|---|---|---|--|
| 1 | SUMP PUMP CONTROL PANEL (SPCP) | 5 | NEMA 4X JUNCTION BOXES ARE ELECTRICAL ENCLOSURES THAT ARE WATERTIGHT, DUSTTIGHT AND CORROSION RESISTANT. |
| 2 | CONDENSATE PUMP CONTROL (CPC) | 6 | PROVIDE PUMP CORD GRIPS SIZED PER PUMP REQUIREMENTS. |
| 3 | REFER TO MANUFACTURERS INSTALLATION MANUAL FOR MORE INFORMATION. | 7 | CONTRACTOR SHALL LABEL Q-ALERTXT PANEL IN THE ELEVATOR LOBBY. |
| 4 | COORDINATE ALL ELECTRICAL ROUTING FOR THE RACEWAYS WITH V.A UTILITIES ROUTING FOR THE RACEWAYS WITH VA UTILITIES SYSTEMS SUPERVISOR (BARRY) (203-932-5711 X3216). | | |

1 PUMP CONTROL DETAIL

SK-11 NTS

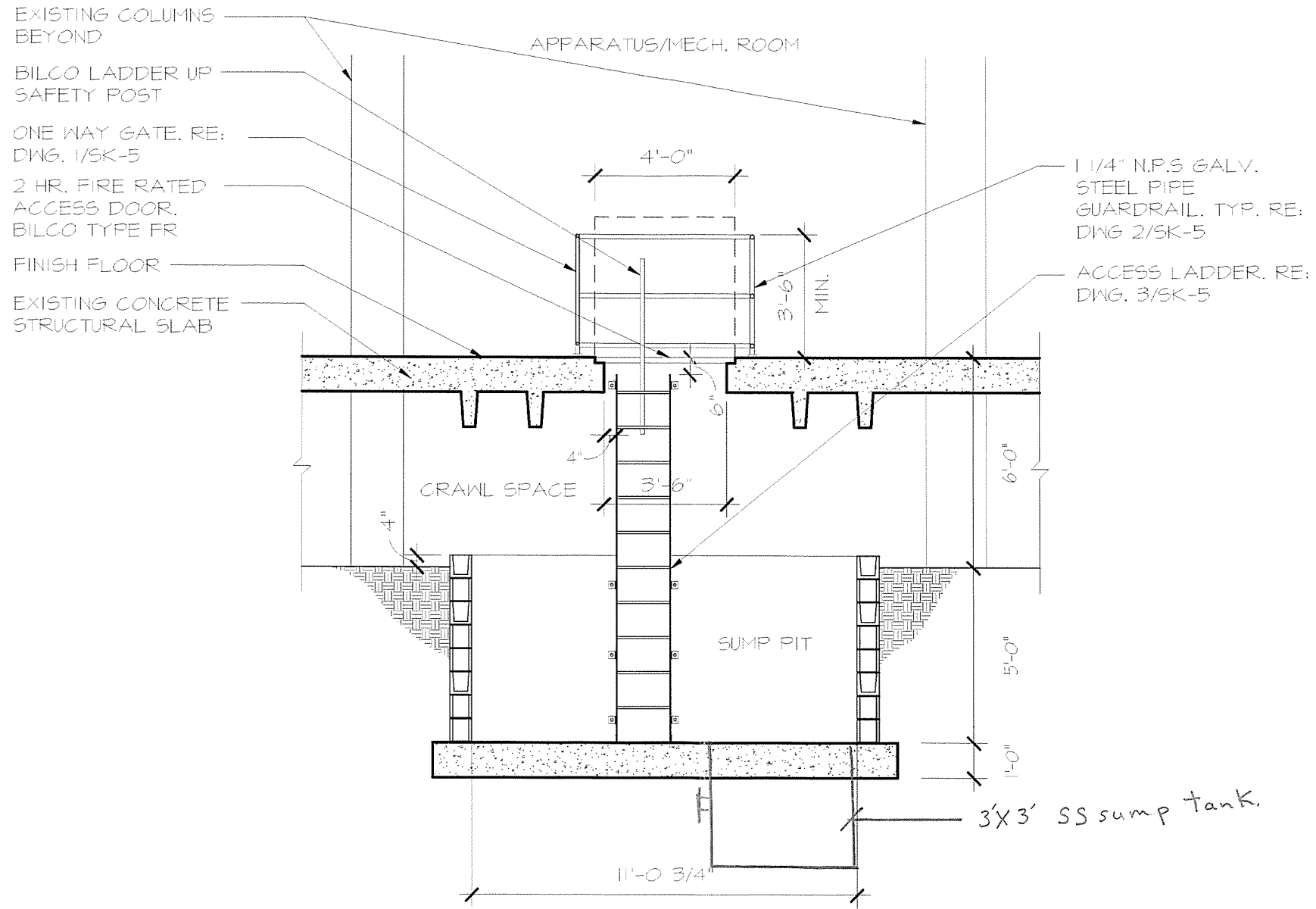
BRUSH-ON COATING OF FLASHING GRADE, FIBRATED ASPHALT ROOFING CEMENT TO A MINIMUM THICKNESS OF 120 MILS.

WATERPROOF MEMBRANE



2 CONDUIT PENETRATION THROUGH FIRE RATED SLAB

SK-11 NTS



1 SECTION
SK-3 1/4" = 1'-0"

PROJECT TITLE: **VA STEAM REPAIR**

DATE: 01/13/11

DWG. TITLE: **SECTION**

PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

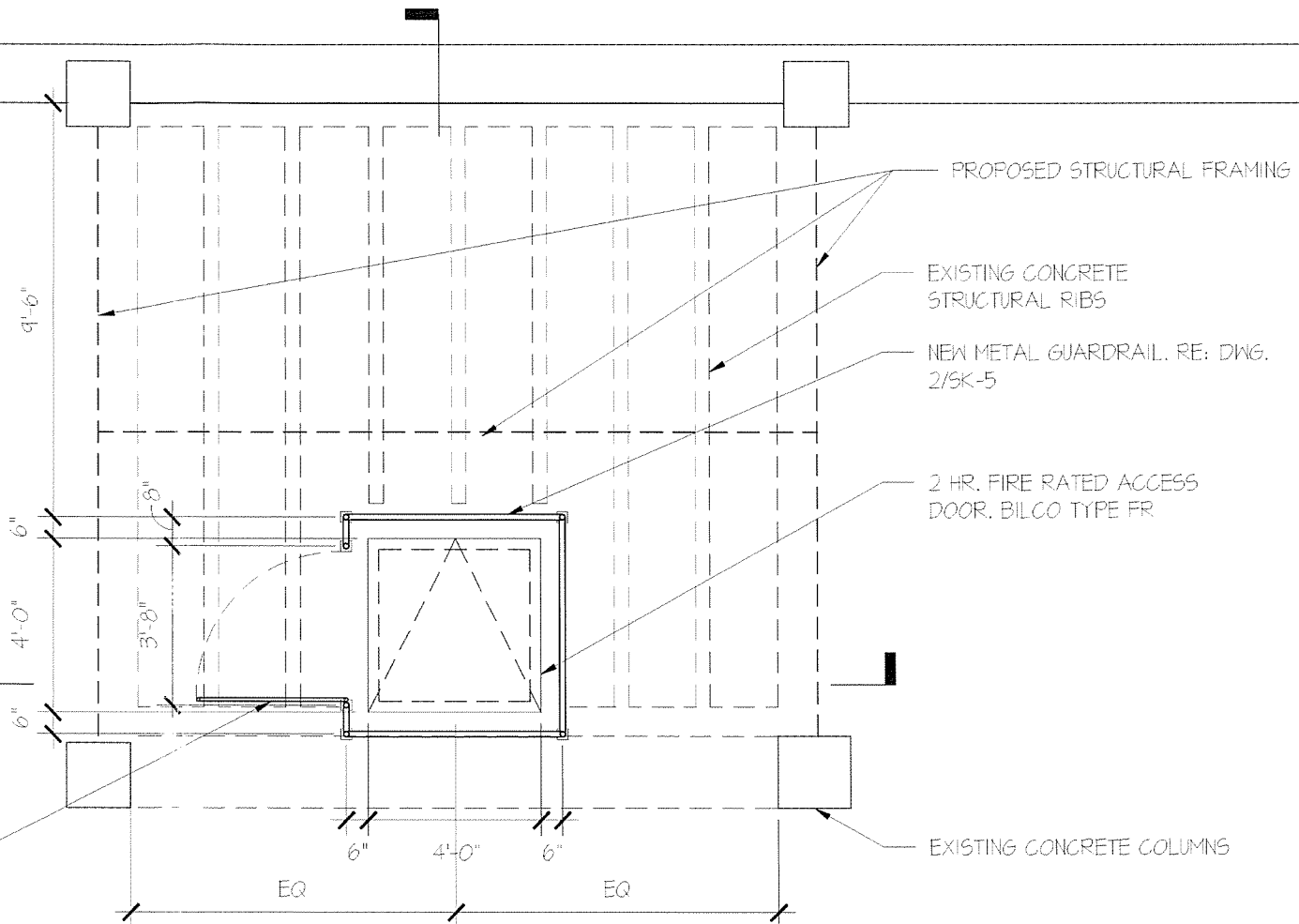
SCALE: 1/4" = 1'-0"

DWG. NO.: SK-3

THREE CORPORATE DRIVE
SHELTON, CT 06484-6244

1 SUB-BASMENT PLAN
SK-1 1/4" = 1'-0"

ONE WAY GATE. RE: DWG 1/5K-5



PROJECT TITLE: VA STEAM REPAIR

DATE: 01/13/11

DWG. TITLE: SUB-BASEMENT PLAN

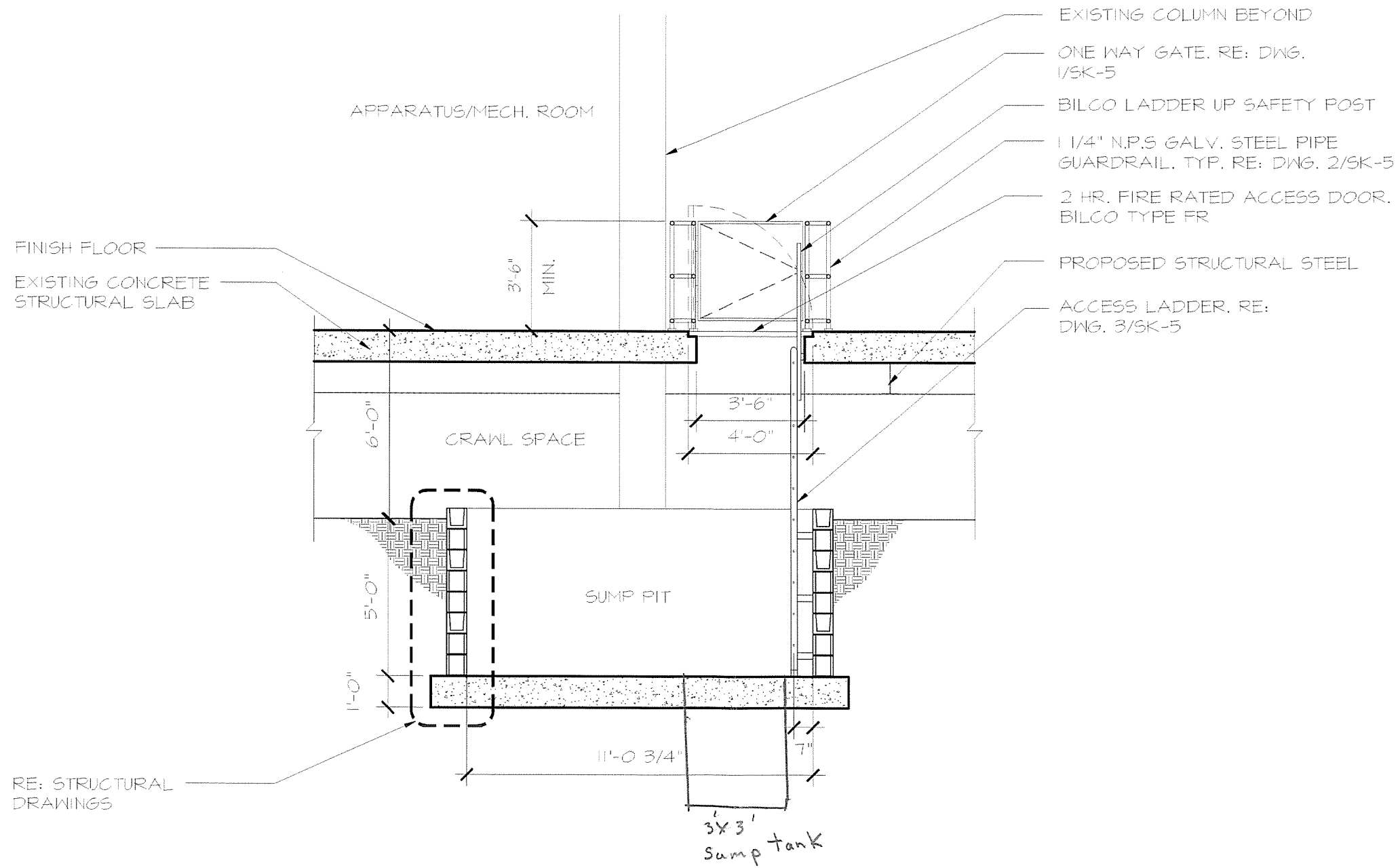
PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

SCALE: 1/4" = 1'-0"

DWG. NO.: SK-1

THREE CORPORATE DRIVE
SHELTON, CT 06484-6244



1 SECTION
SK-4 1/4" = 1'-0"

PROJECT TITLE: **VA STEAM REPAIR**

DATE: 01/13/11

DWG. TITLE: **SECTION**

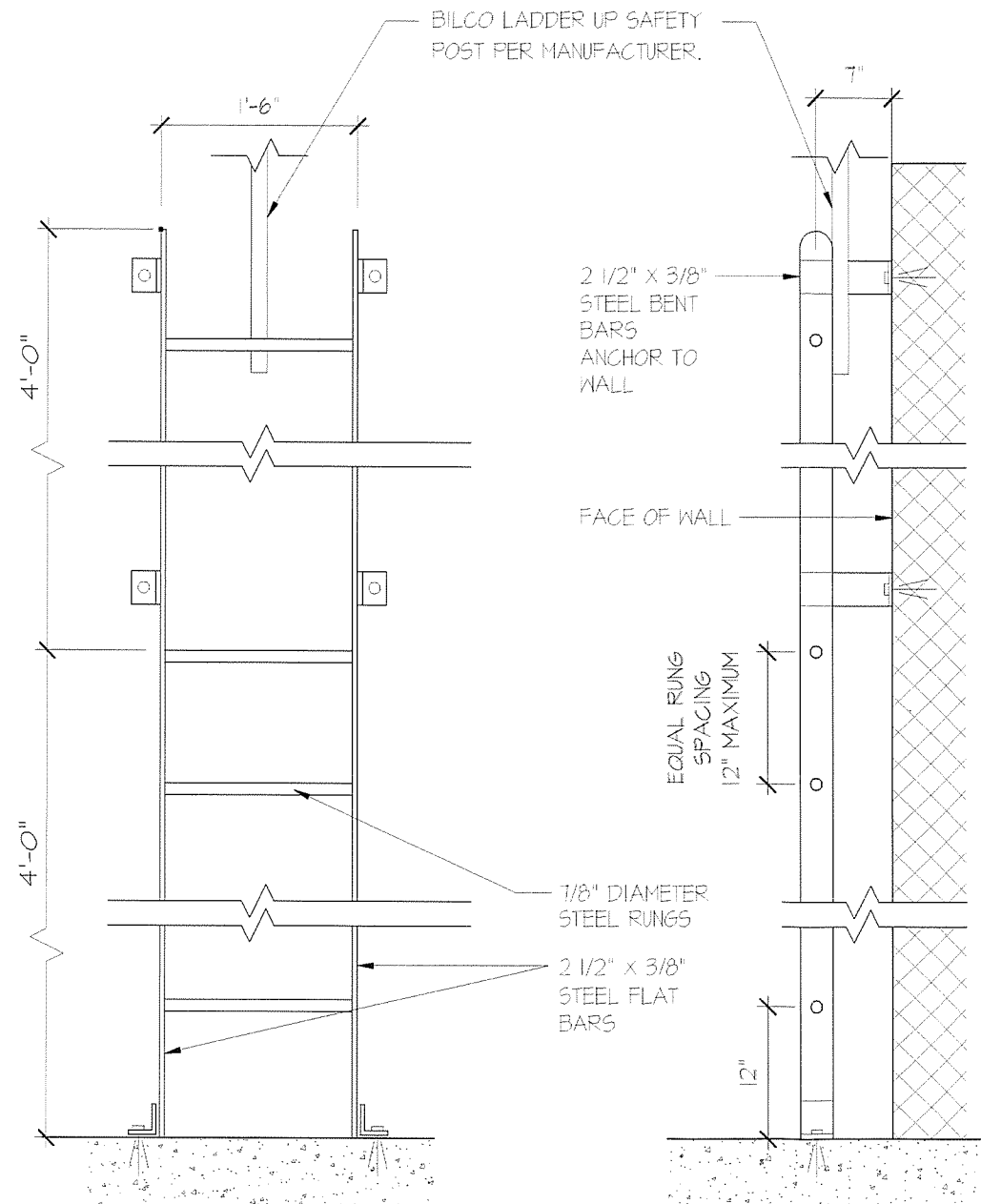
PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

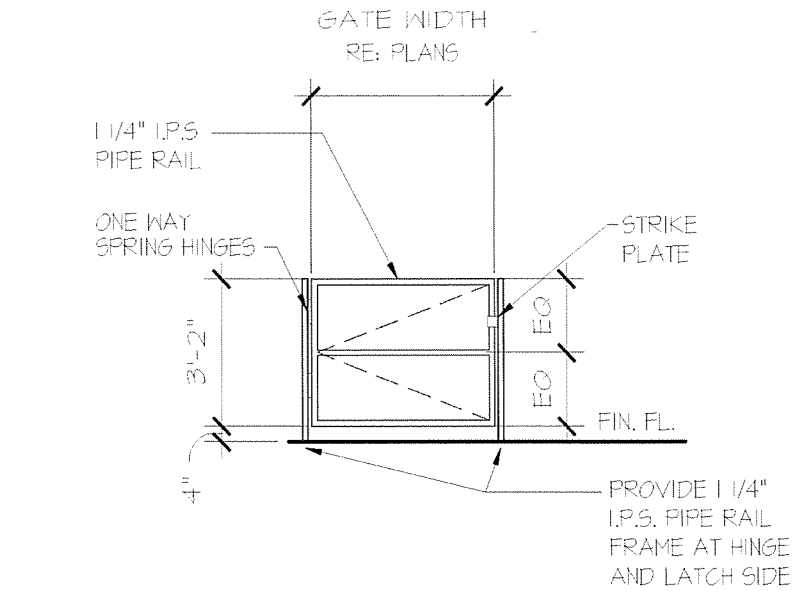
SCALE: 1/4" = 1'-0"

DWG. NO.: SK-4

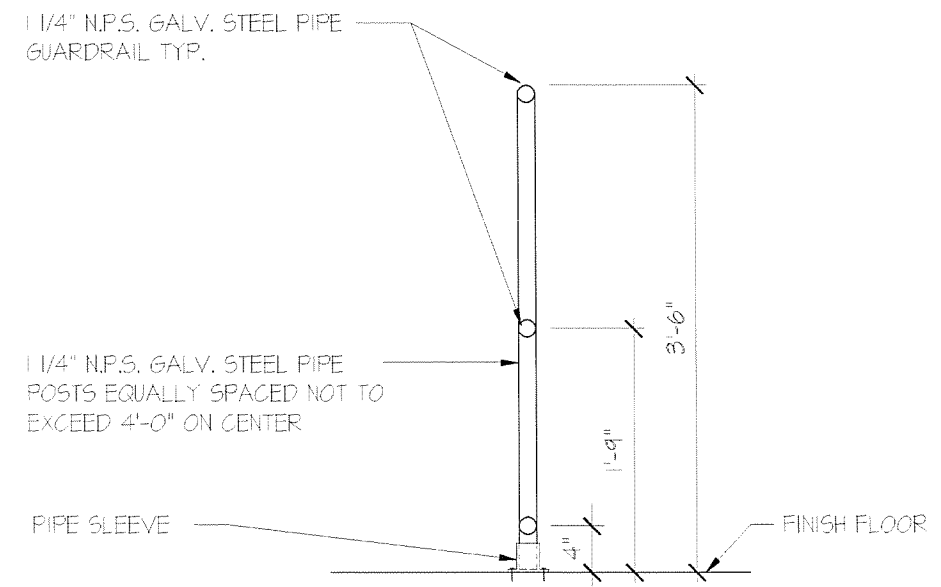
THREE CORPORATE DRIVE
SHELTON, CT 06484-6244



3 SUMP PIT LADDER
SK-5 3/4" = 1'-0"



1 ONE WAY GATE
SK-5 1/4" = 1'-0"



2 GUARDRAIL
SK-5 3/4" = 1'-0"

PROJECT TITLE: **VA STEAM REPAIR**

DATE: 01/13/11

DWG. TITLE: **DETAILS**

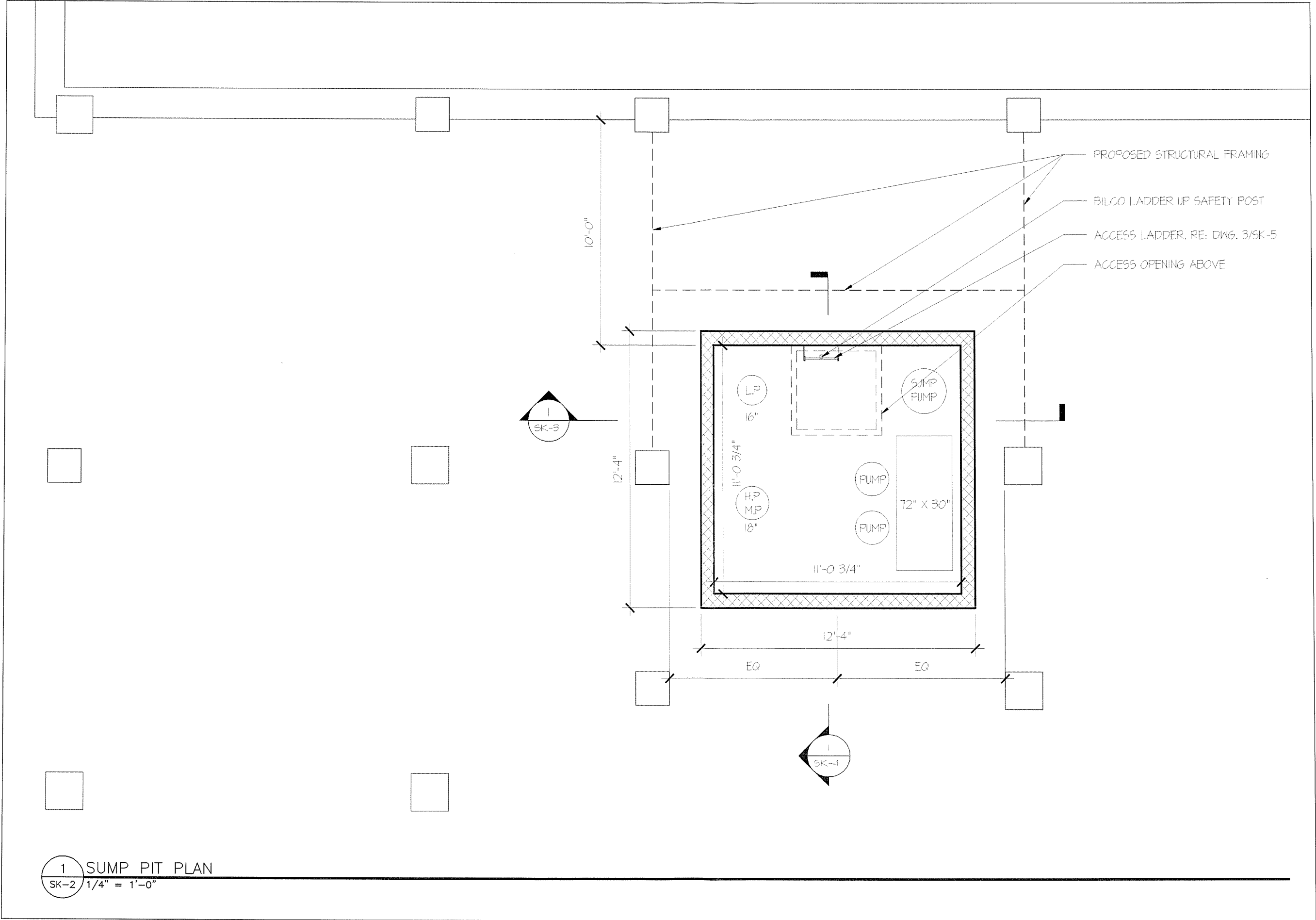
PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

DWG. NO.: SK-5

SCALE: AS NOTED

THREE CORPORATE DRIVE
SHELTON, CT 06484-6244

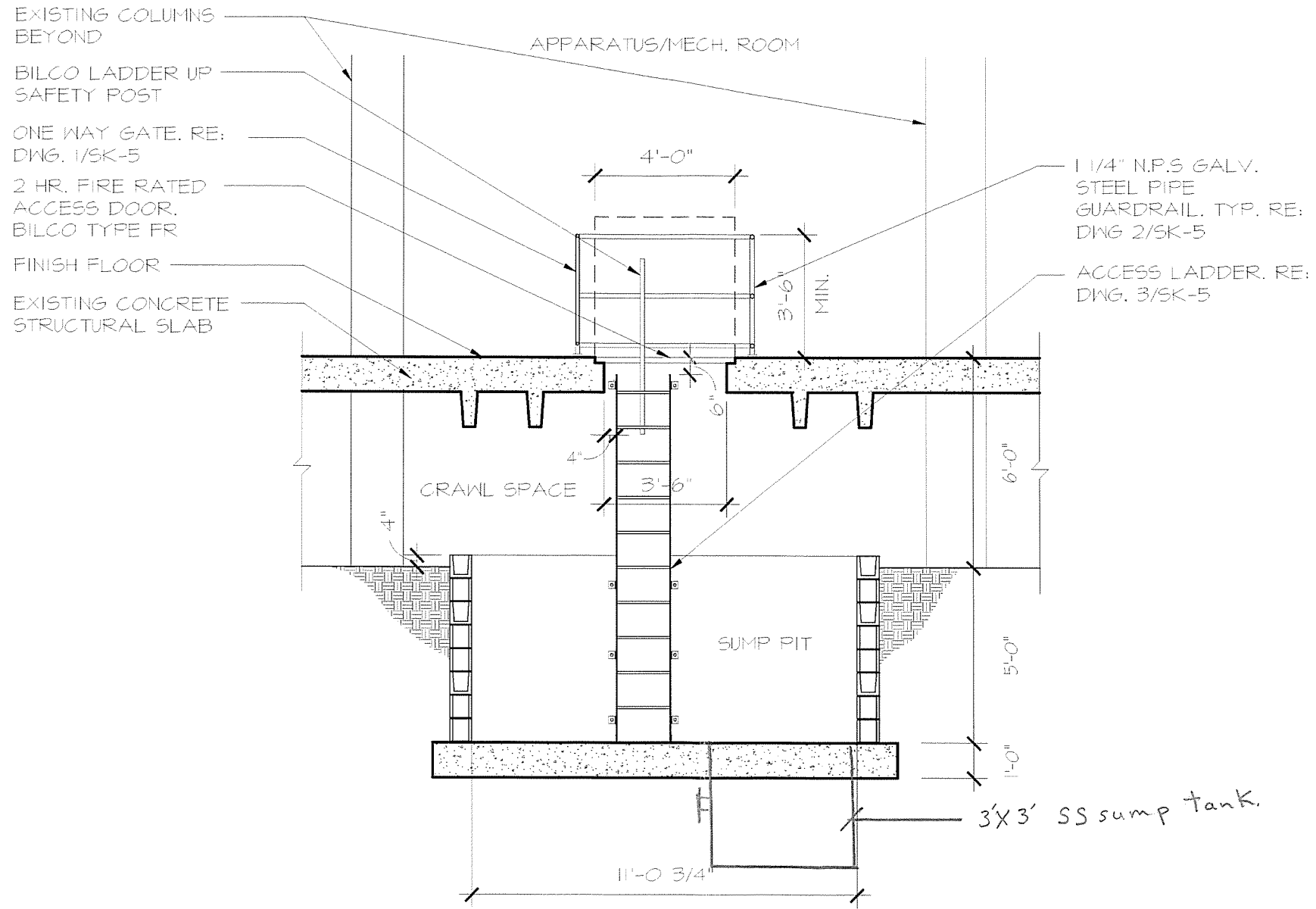


PROJECT TITLE: **VA STEAM REPAIR** DATE: 01/13/11

DWG. TITLE: **SUMP PIT PLAN** PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER SCALE: 1/4" = 1'-0" DWG. NO.: SK-2

THREE CORPORATE DRIVE
SHELTON, CT 06484-6244



1 SECTION
SK-3 1/4" = 1'-0"

PROJECT TITLE: **VA STEAM REPAIR**

DATE: 01/13/11

DWG. TITLE: **SECTION**

PROJECT NO.: S080790

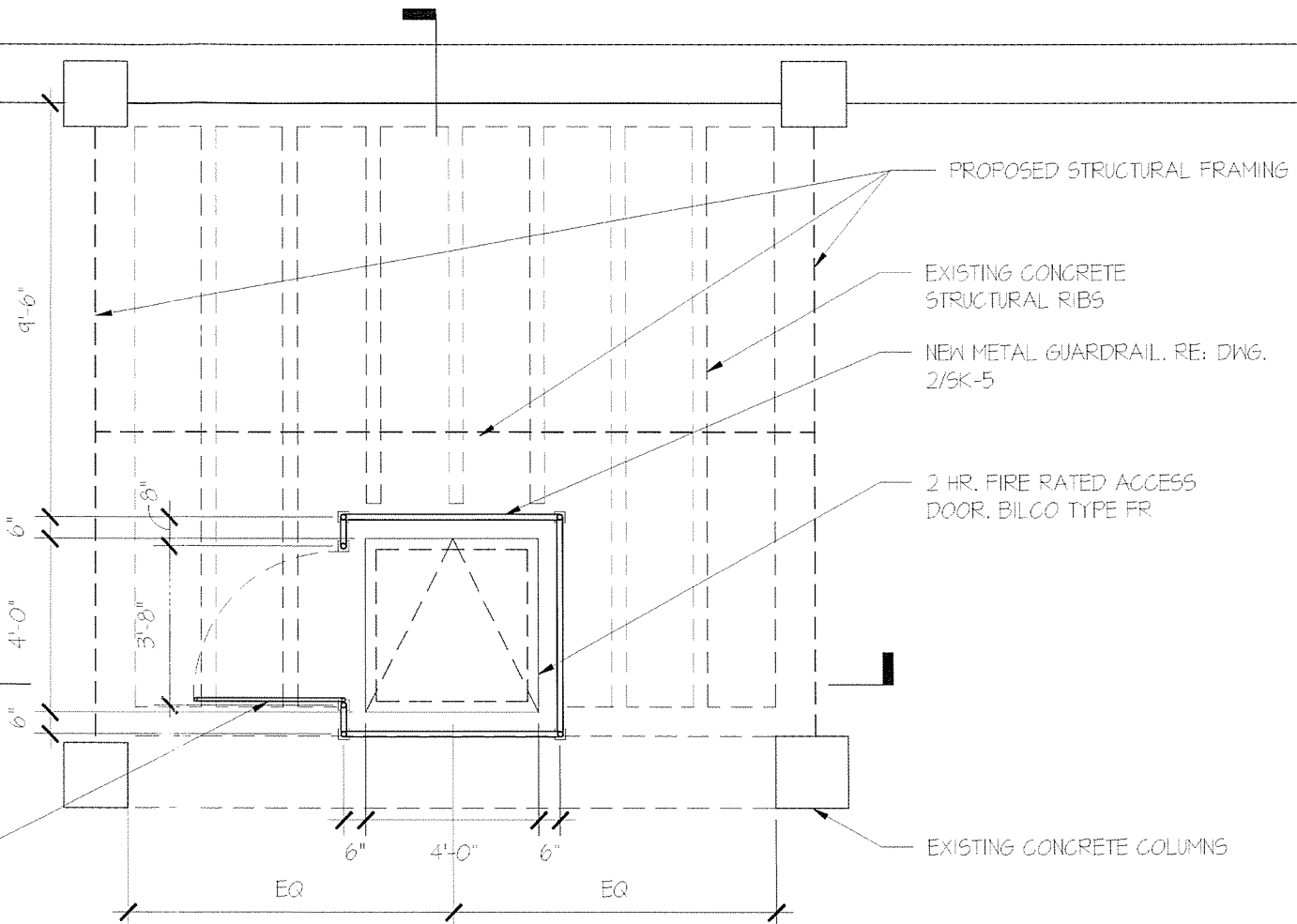
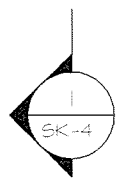
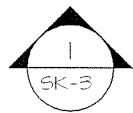
DRAWN BY: B. SMUCKLER

SCALE: 1/4" = 1'-0"

DWG. NO.: SK-3

THREE CORPORATE DRIVE
SHELTON, CT 06484-6244

ONE WAY GATE. RE: DWG 1/5K-5



PROJECT TITLE: VA STEAM REPAIR

DATE: 01/13/11

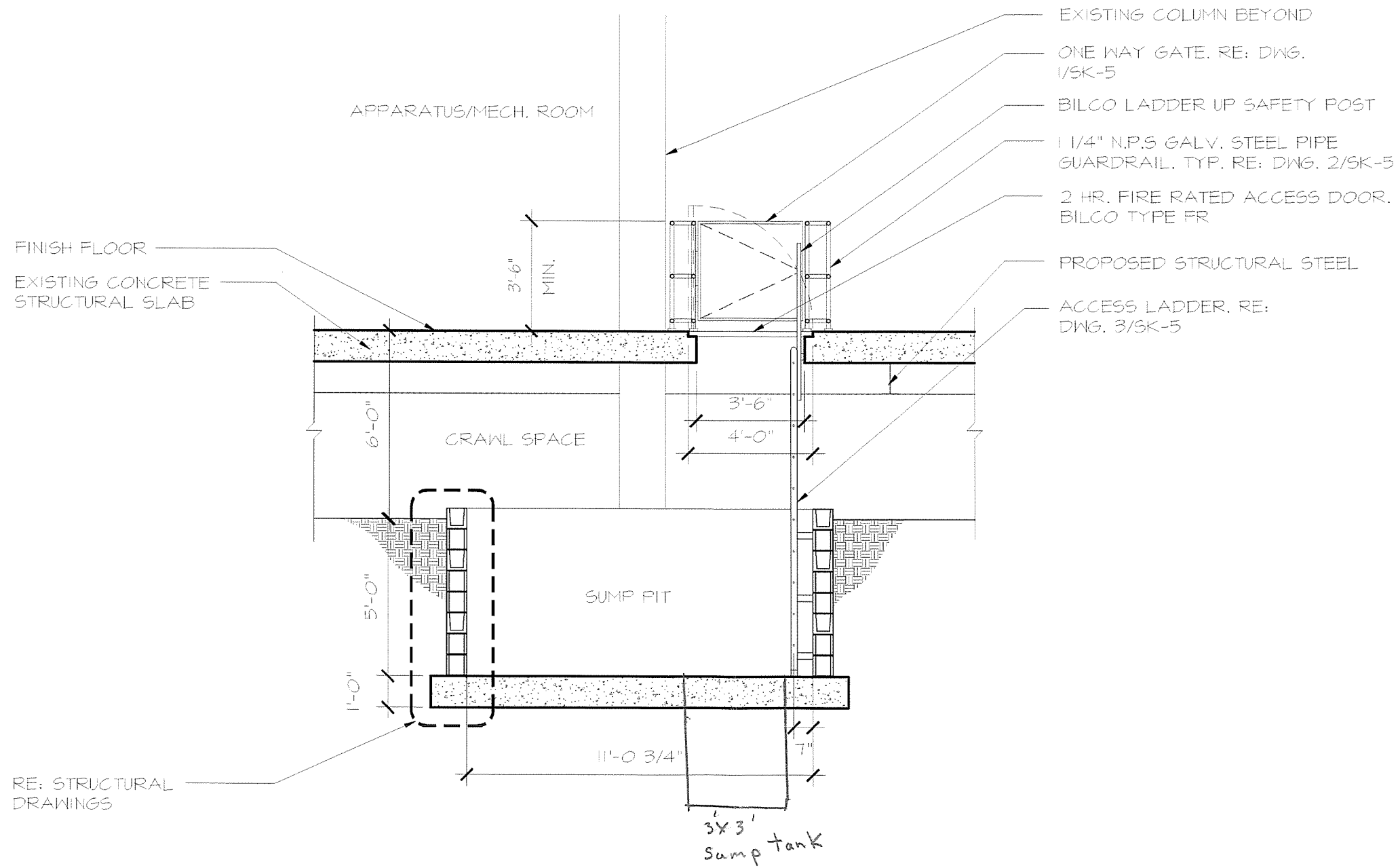
DWG. TITLE: SUB-BASEMENT PLAN

PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

SCALE: 1/4" = 1'-0"

DWG. NO.: SK-1



1 SECTION
SK-4 1/4" = 1'-0"

PROJECT TITLE: **VA STEAM REPAIR**

DATE: 01/13/11

DWG. TITLE: **SECTION**

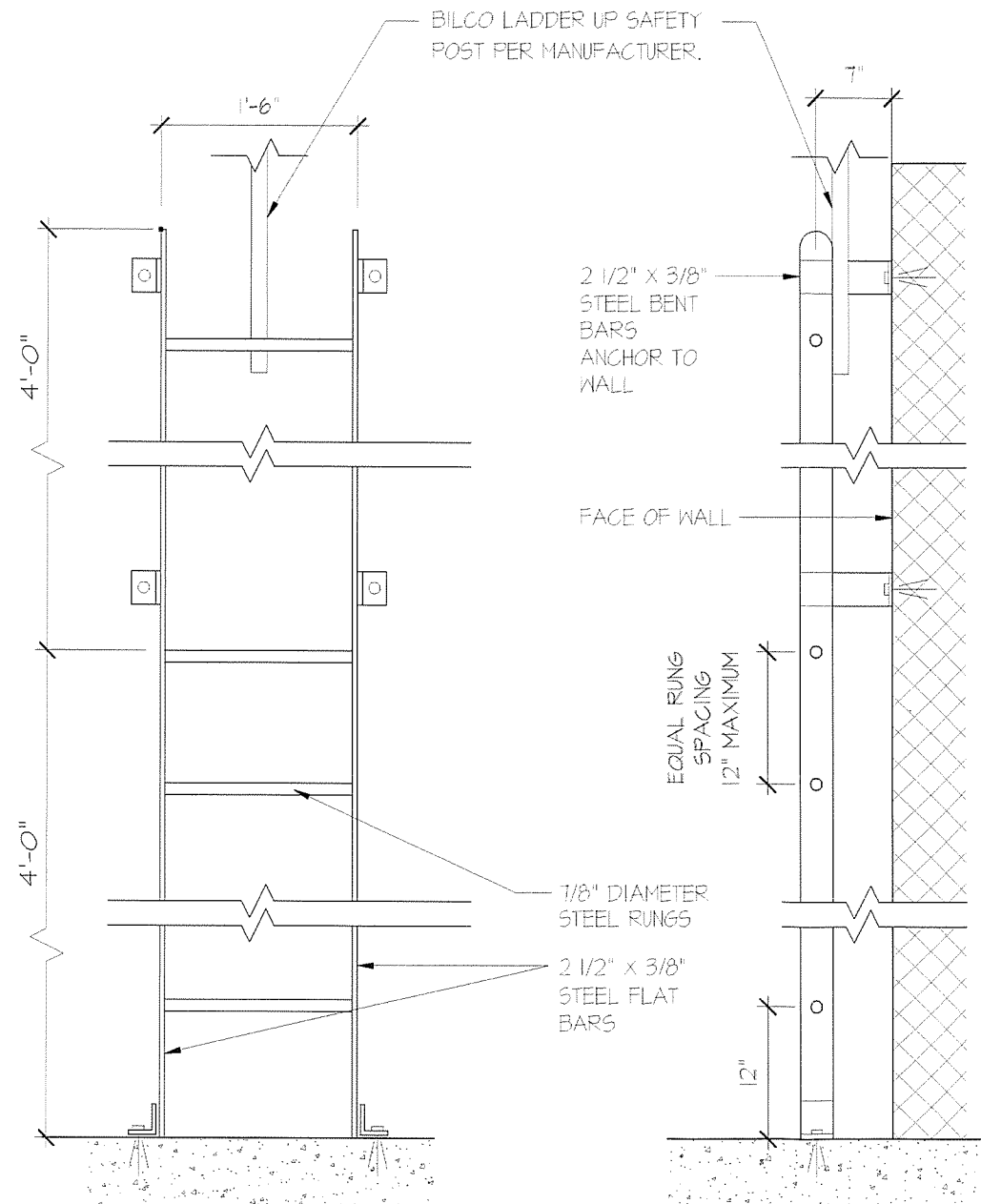
PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

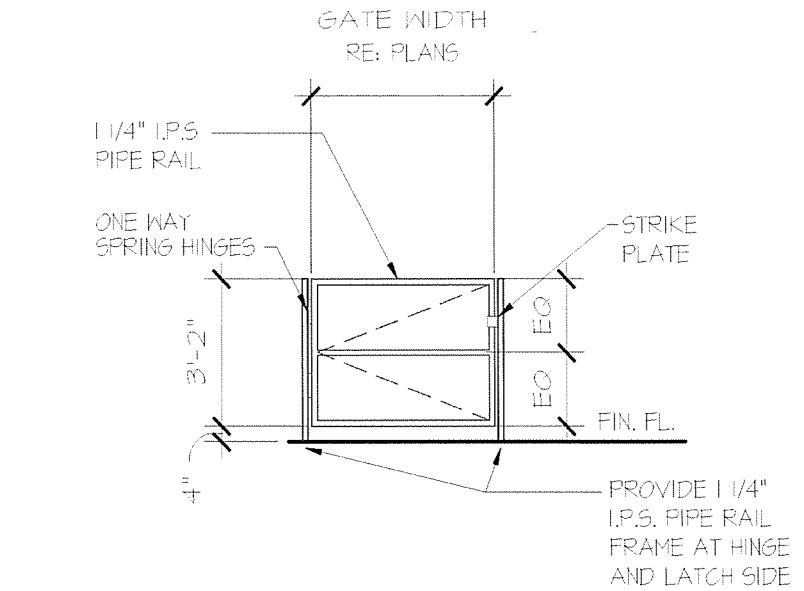
SCALE: 1/4" = 1'-0"

DWG. NO.: SK-4

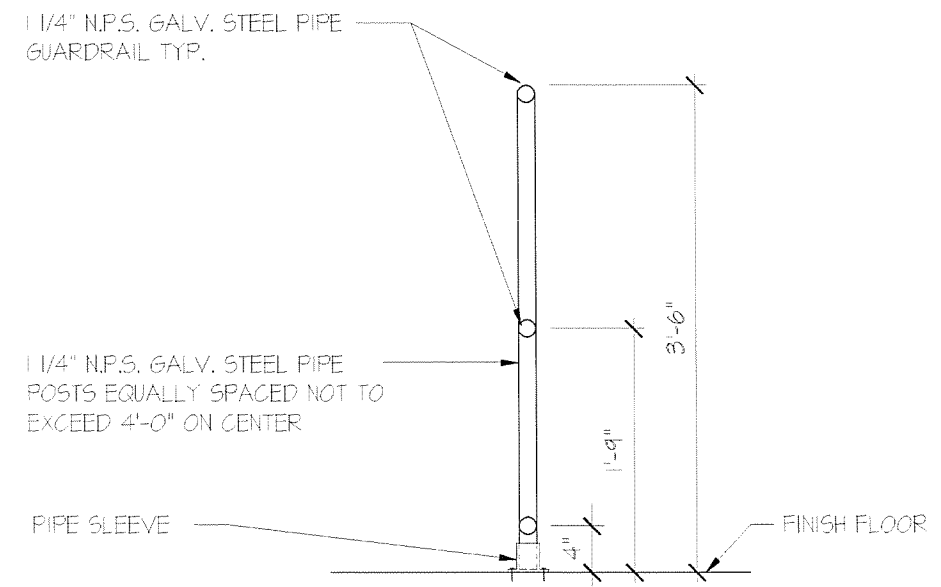
THREE CORPORATE DRIVE
SHELTON, CT 06484-6244



3 SUMP PIT LADDER
SK-5 3/4" = 1'-0"



1 ONE WAY GATE
SK-5 1/4" = 1'-0"



2 GUARDRAIL
SK-5 3/4" = 1'-0"

PROJECT TITLE: VA STEAM REPAIR

DATE: 01/13/11

DWG. TITLE: DETAILS

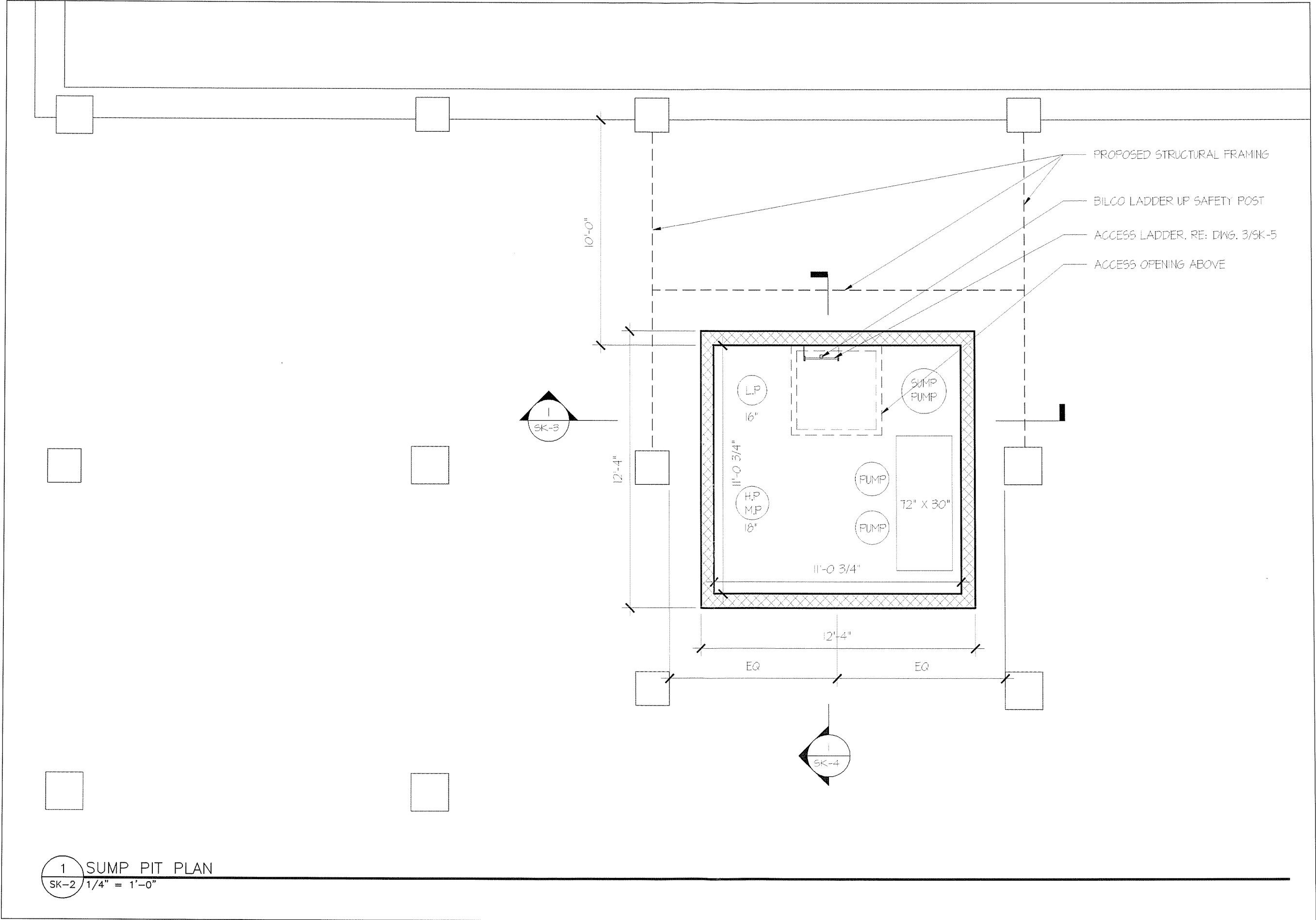
PROJECT NO.: S080790

DRAWN BY: B. SMUCKLER

DWG. NO.: SK-5

SCALE: AS NOTED

THREE CORPORATE DRIVE
SHELTON, CT 06484-6244



PROJECT TITLE: **VA STEAM REPAIR** DATE: 01/13/11

DWG. TITLE: **SUMP PIT PLAN** PROJECT NO.: S080790

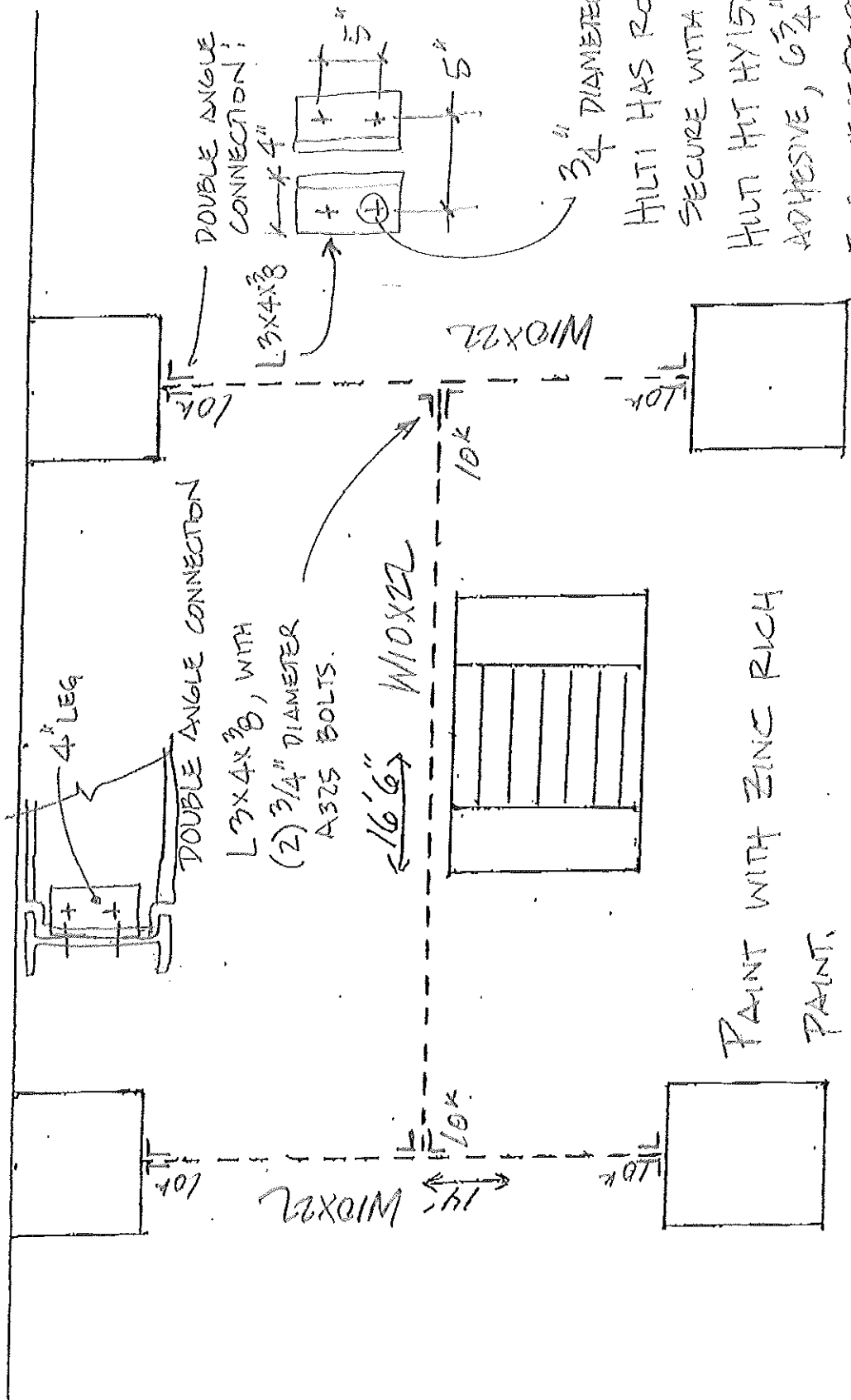
DRAWN BY: B. SMUCKLER SCALE: 1/4" = 1'-0" DWG. NO.: SK-2

THREE CORPORATE DRIVE
SHELTON, CT 06484-6244

ARRANGEMENT 2

p. 1 of 2

OUT Side Wall



3/4\" DIAMETER

HULTI HAS ROD

SECURE WITH

HULTI HIT HY150 MAX

ADHESIVE, 6 3/4\"

EMBEDMENT DEPTH.

PAINT WITH ZINC RICH

PAINT.

1/4" Bl'd 2 Cond. Pit 1" = 1ft scale

← 12" →

← 12" →

